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Industrial FINISHING

W. H. ROHR, Editor P. C. BARDIN, Associate Editor

Contents

OCTOBER, 1948
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...tributed monthly to finishing ...ers and paint shop foremen, ...roduction superintendents, ...emists, purchasing agents and ...ompany executives of metal-...rking, woodworking and mis-...ellaneous industrial plants ...here production cleaning and ...inishing are major operations in ...arts and products manufacture.

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24 TWENTY-FOURTH YEAR OF PUBLICATION

Improved Production. A recent survey by the National Industrial Conference Board shows that unit output per man-hour is higher than a year ago—with two-thirds of the companies contacted. Only 10% report a decline. Another fact brought out in the report is that 61% of the companies surveyed report a higher production per man-hour than that of the prewar years 1939-41.

Commenting on the subject of production and productivity, the New York Times says, "It is a truism that one of the most effective of all defenses against inflation is a high rate of production. But like most generalizations, this one is subject to certain qualifications. For example, if increased production is inefficient production or high unit cost production, its effects so far as rising prices are concerned may be largely or completely nullified". Something to think about.

* * *

New Paint Contains No Lead. An outside paint that contains no white lead has been developed in the research laboratories of a leading manufacturer of paints, varnishes, lacquer and other finishing materials.

It is pointed out that the new leadless paint is especially effective in industrial areas where sulphurous gases discolor and cause other damage to paint containing lead.

According to the company's announcement, "This new paint is a boon not only to residents of industrial areas but of equal importance to home owners in suburban residential and other non-industrial areas as the white, for instance, is not only whiter initially but stays whiter longer under all normal service conditions." It is available in all colors.

This new paint should prove equally valuable in plant maintenance.

* * *

Measuring Dryness. How long a time is required for the material with which your product is coated to dry? A device known as a circular Drying Time Recorder is available. It plugs into any electric lighting outlet and may be placed over the wet film coating which has been applied to practically any plane surface. Timing is done electrically.

Various stages of dryness such as "set - to - dust", "set - to - touch" and "hard-dry" can be easily and quickly determined. This device should increase the efficiency of any finishing room.

* * *

Free Enterprise. "Proceed cautiously," advises Preston Delano, Controller of the Currency. This advice is for everybody—workers, management, industry and the crossroads store. In his annual report as supervisor of the country's more than 5000 national banks, Mr. Delano said:

"There is something deeper and more fundamental involved here than simply the question of another de-

pression. What is on trial now in these United States is the basic question of whether a free enterprise system can discipline itself; whether men working in a competitive economy can impose upon themselves voluntary restraints which must be imposed if the system is to endure."

This is sound advice. There is no good substitute for a free enterprise system.

* * *

Wallpaper Designs in the hand-printed variety were recently shown in New York. The accent was in soft designs and small motifs. Stiff geometric patterns are softened by small splashes of color. A line drawing of ducks in grass, done in white and beige on deep gray, appeared along with the scenics. All of them are available in any color combinations. These designs and prints are truly representative of the best in the screen printers art.

* * *

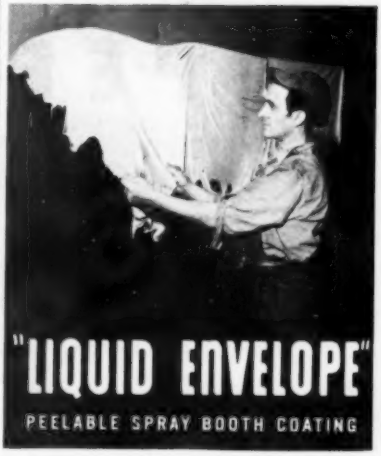
A new Plastic suitable for many industrial and commercial uses has been developed. It is called Kel-F and is highly resistant to chemical action, maintains satisfactory properties over a wide range of temperatures. Also it is said to provide good heat and electrical insulation, and is resistant to water, humidity and tropical conditions. It is easily fabricated and has high impact strength.

Tests have been made by exposing the material over prolonged periods to sulphuric, hydrochloric and hydrofluoric acids, as well as other agents, without showing any damaging effect. It should be suitable for pump packing, valve seats and packings wherever corrosive liquids or gases are used.

Kel-F is transparent and may be heat-treated to make it either harder or more resilient, depending upon

(Continued on page 132)

CUT BOOTH-CLEANING COSTS



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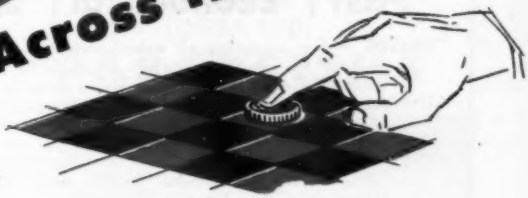
MANUFACTURERS OF INDUSTRIAL FINISHES

ARE Balanced "Across the Board"



Just as the wise checker player fits his "moves" to his opponent's type of defense, so, too, does the wise manufacturer specify the finishing material that fits BOTH his product requirements and his production methods.

That's why for many of its 83 years, the Lilly Varnish Company has offered ONLY specific finishes formulated for specific products and purposes. It assures the manufacturer that each Lilly Product is "balanced across the board" with a specific job—your job—in mind.

Each of your particular requirements—appearance, wearability, drying facilities, method of application—is given its due weight before final formulation.

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"UNISOL No. 2"—A new cold stripper for japans and vinyls—Non inflammable—Strips tough japans and vinyls in matter of minutes—Used for all type metals.

"STRIPPER 202"—Something new for removing "stop-off" lacquers in seconds—Will not tarnish highly polished metal surfaces—Non inflammable—Used cold—Non toxic.

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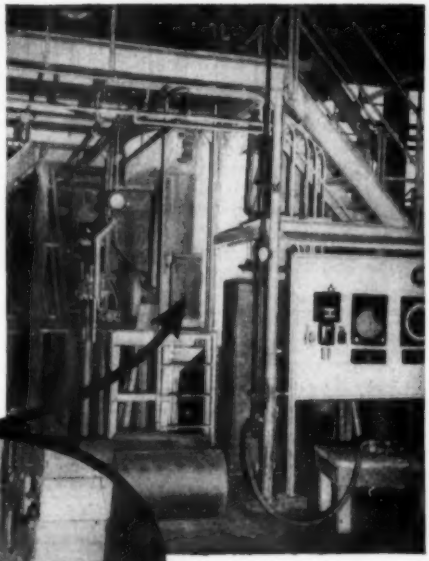

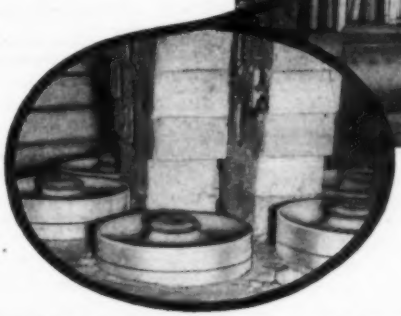

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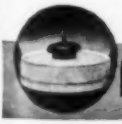


3425 West Madison Street, Chicago 24, Illinois

BURDETT MANUFACTURING CO.
INFRA-RED GAS BURNERS

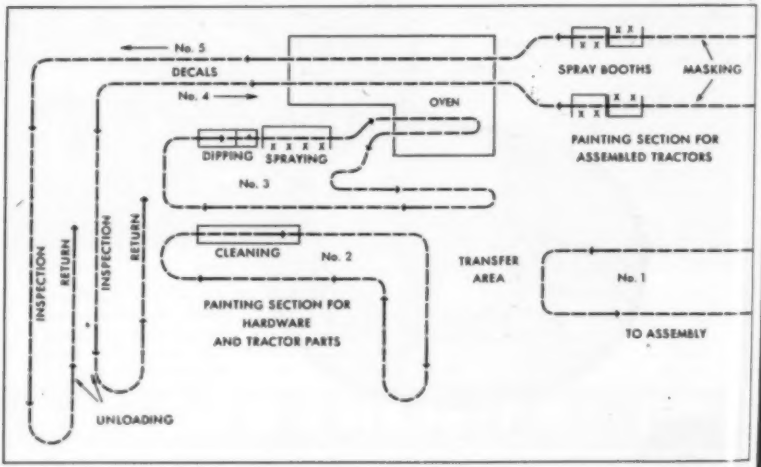
Production Painting Setup for Farmall Tractors

By R. E. Snyder

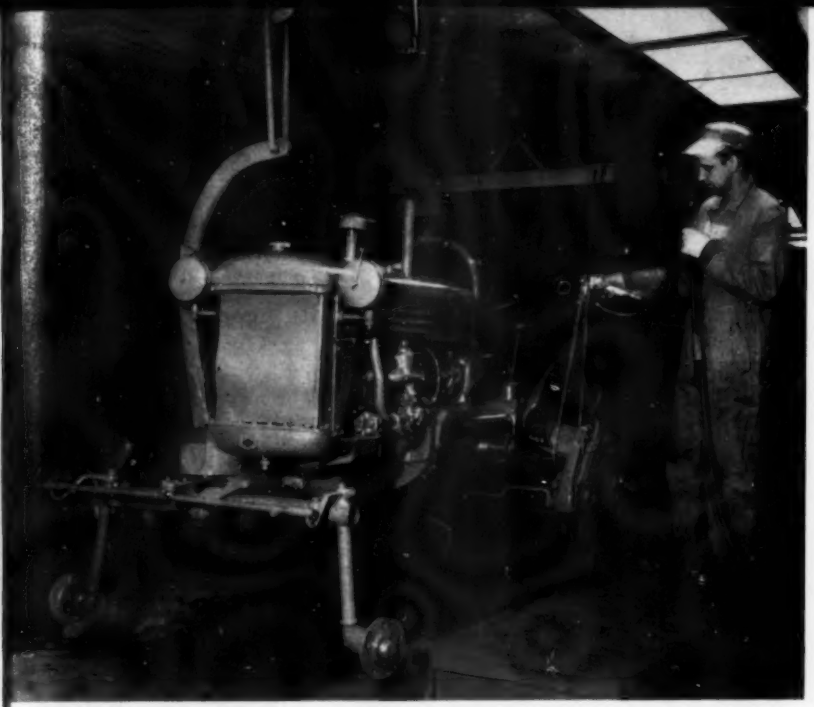
This modern conveyorized setup includes preparation of surfaces, rust prevention, dipping, masking, spray painting, gas-oven drying, stripping off masks, putting on decals, and final inspection.

FARM TRACTORS must be painted for protection as well as for appearance. Most farmers take a justifiable pride in their equipment and provide suitable shelter for tools and machinery when they are not in use. But there are some who leave their equipment outside the year around, so every part of a tractor must be painted as a protection against long outside exposure—and rust.

The paint department of the Louisville, Ky., plant of International Harvester Co. is divided into



Floor plan showing approximate location of equipment and conveyors 1, 2, 3, 4 and 5.



Spray painting an assembled tractor in second spray booth along conveyor No. 4. Notice the height of the tractor in background. Close-fitting masking shields protect headlights. The waterwash spray booths are well lighted and efficient, and they are always kept clean.

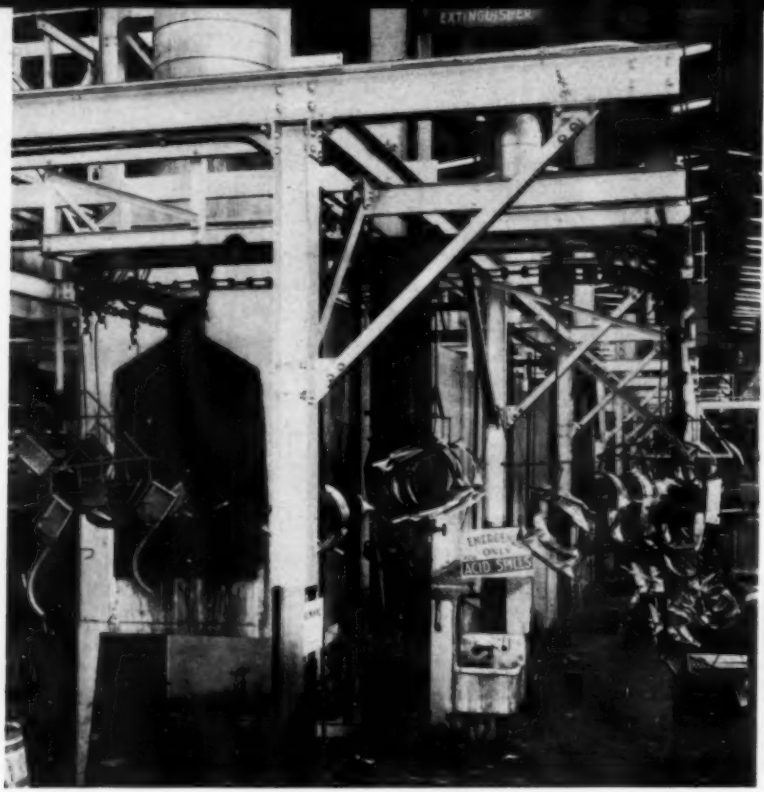
two sections. Hardware, small parts and unassembled pieces are either dipped or partially spray painted on one conveyor line. Then the assembled tractors are spray painted on two other overhead chain conveyors.

Simplicity is the keynote of International's painting system. This is made possible by correct engineering and adequate equipment.

Hot Cleaning; Rinsing Protection from Rust

Everything goes through the 3-stage metal washer. Small pieces as well as unassembled parts are delivered to the paint department either on conveyor No. 1, or in large metal tubs by overhead crane. The surface cleaning job consists of removing heavy drawing compound and grease. Regardless of the method of delivery, the parts are loaded on conveyor No. 2 at the transfer point. Conveyor No. 2 has hooks spaced on 24-in. centers and it operates at a speed of 10-ft. per minute.

In the metal-cleaning setup the first stage consists of spraying with a caustic cleaning compound which is heated to 180° F. Next comes a hot water rinse. In the final stage an oil emulsion, heated to 180° F., is sprayed over the work. This oil



Small parts, hooked to chain conveyor, are entering the 3-stage metal-cleaning equipment.

serves as a rust inhibitor in case the parts have to remain unpainted in the shop over a holiday or week end. Hardware and small parts are placed in open wire mesh baskets, and they remain in these baskets to be dip painted and dried.

Dip Coating and "Partial" Painting

Arriving at the transfer point, all baskets and parts are hung on conveyor No. 3, which also has hooks on 24-in. centers. This conveyor operates at a speed of 6-ft. per minute. Those parts that are suitable for dip coating are removed at the dip tank and lowered into the material by an electric hoist; after draining they are returned to the conveyor.

Pieces that require only "partial" painting remain on the conveyor to go through the large water-curtain spray booth. By "partial" painting is meant the coating of surfaces which, at the time of assembly, will be bolted together—or any part of a surface which will be hidden by some other part. For example, battery boxes and tool boxes; these metal boxes are paint-

Oakite Composition No. 90 for reverse-current cleaning

You never know how good an electrocleaner can be until you watch Oakite Composition No. 90 go to work on oils, greases, smuts, all the objectionable films that interfere with good electroplating on steel.

"No. 90" makes a well-balanced solution that does everything just right. It has high conductivity that keeps oxygen bubbling off the work, prying dirt loose at a rapid rate. It has good wetting and dispersing action. It has plenty of buffering and water-softening ability. Even its bubbles are perfect—just strong enough to keep alkaline spray from being a nuisance around the tank; just brittle enough to prevent the development of thick explosive foam. In short, Oakite Composition No. 90 has every quality needed for good electrocleaning at low cost per unit.

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MINIT-KOTE removes the risk from metal finishing. It provides faster, more thorough cleaning and at the same time protects by forming a light, but uniform phosphate coating on the cleaned surface for better, longer lasting paint adherence —all in one simple, cost cutting operation.

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d all around, inside and outside; ultimately they will be bolted to the frame. Another example is the inside surface of the combination hood and gas tank. After assembly it would be impossible to coat the under side of the hood by spraying.

Fire-Engine Red Synthetic Enamel

Synthetic enamel, fire-engine red in color, is used for the paint job. In the dip tank this paint is kept at a viscosity of 28 seconds at 75° F., as measured with a No. 4 Ford cup. The same material is used in spray finishing at a viscosity of 25 seconds at 75° F., as measured by a No. 4 Ford cup; fluid pressure, 25-lbs.; atomizing pressure, 70-lbs.

The painted parts pass through a convection oven where the finish is force dried for 20 minutes at 210° F. Leaving the oven the work cools as it travels to the transfer point. Here some of the parts are suspended on conveyor No. 1, to be returned to the assembly lines. This conveyor moves along the assembly lines and returns through the fabrication department. Other pieces are loaded in metal tubs to be delivered to assembly by overhead crane.

Masking Tractors for Final Spray Coat

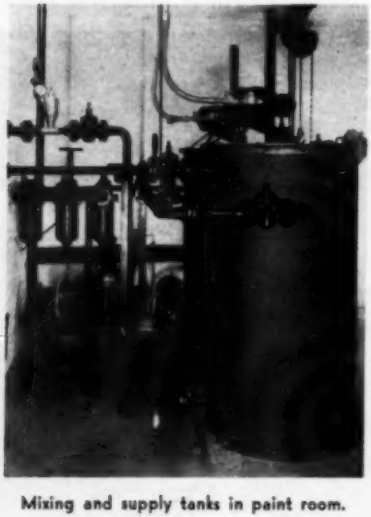
After they have been assembled the tractors are transferred to conveyors No. 4 and No. 5. Hooks attached to these overhead chain conveyors are spaced on 12½-ft. centers. The conveyors operate at a speed of 6-ft. per minute. The first operation is masking. Head and rear light lenses are covered with metal

View in Louisville Works of International Harvester Co's. Farmall Tractor Division.

shields which are held in place by spring wires. Radiator grills are covered, and all electrical connections are taped; certain other areas are masked, as required.

In order to facilitate the masking job, maple butcher blocks are placed close to the conveyor lines. Strips of masking tape are placed on top of these blocks, and the various masking shapes are cut with steel dies. Having the exact size and shape of mask handy saves both time and masking tape. Also, it helps to produce a neat, clean-cut finishing job.

Assembled tractors are spray painted on one side in the first spray booth, and on the other side in the second booth—like automobile bodies. Two men work in each spray booth. The first operator sprays the top surface. Inside this booth the conveyor rises about 3 ft. to make it easy for the second operator to spray the under side of the tractor. Upon entering the second spray booth, the first operator there finishes the opposite underside. Inside this booth the conveyor drops to its original level so that the second operator can spray the opposite top side.



Mixing and supply tanks in paint room.

Oven Drying; Stripping Masks; Applying Decals

Just outside the spray booths, the two conveyor lines (No. 4 and No. 5 in the accompanying drawing) converge and rise to carry tractors into and through a high-level convection oven where the red enamel is force dried for 20 min. at 210° F. At the exit end of the oven the conveyor lines drop to permit floor level operations such as mounting wheels and tires, installing batteries and tools, completing electrical connection, etc. Also, along this line all masking shields and masking tape are removed. The name, trademark and the instructional decals are then applied.

Final inspection is made under banks of fluorescent lights just before the completed tractors are mechanically lowered to floor level and unhooked from the conveyor to be driven off under their own power for a final performance test.

Paint Circulating Supply System

Enamel, properly mixed and of exact color and uniform viscosity, is supplied to the spray booths from a central paint-circulating supply system. At present, only

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AMONG THE MILLIONS of consumer and industrial products produced throughout all industries you will find that many are beautified and protected with *Finishes by Stanley*. If your product requires a finish to resist corrosion, sunlight, heat, cold, foods, dirt or aging . . . to add sales appeal or increase durability, Stanley chemists can suggest or create a coating that will solve your finishing problem. For evidence of our ability, write or wire Stanley Chemical Co., East Berlin, Conn.

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INDUSTRIAL COATINGS

LACQUERS SYNTHETICS JAPANS ENAMELS

A completed Farmall tractor ready to work.

one color is used. Two 120-gallon material tanks are used. One is a a mixing tank and the other is the supply tank. Both are fitted with agitators, valves and pipe connections to make them interchangeable. Paint filters (the laminated disc, self cleaning type) are installed in the pipe lines through which the enamel passes.

The air pressure on the outgoing lines is maintained at 30-lbs., and on the return lines, 20-lbs. Ample space is provided for the installation of additional tanks if and when other colors are required. The paint mixing room is of fireproof construction and is equipped with automatic closers for the door and ventilator, and CO^2 fire-extinguishing system.

Wood Finishing School Operating In Chicago

The General Trades School, 3810 N. Broadway, (Telephone Eastgate 1661) Chicago 13, Ill., is conducting an excellent practical course in wood finishing.

The full-time day course, five hours daily, Monday through Friday, lasts 15 weeks. The part-time night course, 3½ hours per night, is on Monday through Thursday and extends over a period of 27 weeks.

The course is approved for veterans. Inquiries and visitors are welcome.

Egyptian Lacquer Co. Personnel

The Egyptian Lacquer Mfg. Co., South Kearny, N. J., announces the following appointments and revisions in key personnel: Mr. Alexander James Lapointe has been appointed Chief Chemist. The sales division acquires Mr. Frederick J Burnett as Technical Sales Manager.

Mr. Philip H. Beach has been moved to West Hartford, Conn., where he will serve as division sales manager supervising sales operation in the entire New England area. In the same capacity, Mr. John Bertil de Brun will superintend the sales division covering metropolitan New York and New Jersey.

D. M. Gans Becomes Director of Research for Arco

Dr. David M. Gans has been appointed Director of Reseach of The Arco Co. manufacturer of automotive, industrial and other special coatings, Cleveland, Ohio.

Dr. Gans, a graduate of the University of Chicago, where he received his Ph.D. in colloid chemistry in 1929, comes to Arco from a chemical products firm where he was technical director since 1945. From 1935 to 1945 Dr. Gans was associated with a large manufacturer of finishing materials.

Dr. Gans also served on the University of Chicago chemistry faculty from 1929 to 1935, and is well-known for his writings on surface phenomena and colloid

David M. Gans, now Director of Research for The Arco Co.

chemistry, nuclear distintegration, and spectroscopy. He holds a number of patents on pigments, inks and textile printing media.

He is a member of the American Chemical Society, American Physical Society, American Society for Metals, American Association of Textile Colorists and Chemists, American Institue of Chemists, American Association for the Advancement of Science, Electron Microscope Society of America, Society of Rheology, and the Chemists Club of New York.

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Hold movable parts firmly in place during shipment with a special new cloth tape that *pulls off clean* and *leaves absolutely no stain* or discoloration! Bauer & Black Industrial Adhesive Tape No. 158 was specially designed to meet the need, among shippers of enameled goods, for a strong, non-staining binding tape. Here are the main advantages of Tape No. 158:

TENSILE STRENGTH: 46 lbs. per in. of width.

PULLS OFF CLEAN, with no messy residue. Retains this quality at high temperatures—up to 180° F.!

ABSOLUTELY NON-STAINING, non-discoloring. Safely used on many white and pastel finishes (alkyd, urea and nitrocellulose lacquers). In photo above,* workman is applying Tape 158 to Kitchen-Kraft wall cabinet doors finished with Dupont Dulux baked-on enamel.

WRITE US for FREE test samples. Inquiries welcome. No obligation. Address Dept. 610, 2500 S. Dearborn St., Chicago 16.

*Courtesy of the Midwest Mfg. Co., Galesburg, Ill.—one of the largest manufacturers of steel kitchens

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Division of The Kendall Company, 2500 S. Dearborn St., Chicago 16

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SELECTION AND APPLICATION OF

Wrinkle Finishes

How to select wrinkle enamel to get what suits your needs; which tests to make and how to judge their value; the correct storage and conditioning of new wrinkle enamel; picking out men to spray this material; what is needed to produce an attractive and a durable wrinkle finish of uniform color and pattern.

By G. A. Conrad

FOR CERTAIN types of work on which wrinkle enamel is used, careful control and skillful application are necessary. I refer to those products for which sections or sub-assemblies are finished separately, to be put together later. Here the finish, as sprayed on different parts at different times, must match perfectly both in color and texture.

When enamels that produce a smooth finish are sprayed it matters little how light or how heavy the finish is sprayed so long as coverage is obtained and runs are avoided. When cured, the coating will appear to be uniform to all but expert eyes; but this is not true of wrinkle enamel which has the added feature of texture or pattern. Great progress has been made in developing wrinkle finishes that produce a uniform pattern under a wide variation of conditions. Nevertheless, even the best wrinkle enamels have certain limitations which, if exceeded, are likely to cause a change of color and texture.

On some particular products a uniform finish is assured by assembling the entire article before it is painted. Afterward it is dismantled to whatever extent may be necessary to permit installation of additional parts. However in the manufacture of many products the parts must be painted separately, sometimes even weeks apart or in different departments, and the standards set up require that every piece must be identical in color, pattern and texture. It is to finish-

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METALLIZED FINISHES
SPECIAL COATINGS

ers who are faced with this problem, of what we might call "precision spraying", that this article may be of greatest service.

For Color Uniformity Control Oven Heat

The control of color is fairly simple and can be disposed of briefly. It is mainly dependent on the oven heat and baking time. Where these factors are under accurate control, there is usually no trouble with color. However it is not good practice to frequently change the heat and duration of the bake; for instance baking one batch at say 275° F. for one hour, and a later batch at 300° F. for 45 minutes. The best practice is to have all materials formulated for one baking schedule; get it to working right and then stick to it without change or compromise.

Much of the color change due to faulty baking conditions may be minimized by proper selection of the wrinkle enamel. Some colors, or even slight variations of the same basic color, are much more stable during the baking cycle than others. Many resins and oils become darker during baking, while some pigments may show up lighter or change color under heat.

It is especially true of wrinkle enamel that the same final result may be obtained by different pigment combinations. In other words, the wet samples of different suppliers may not be at all similar in color, yet all may bake out to a fairly good match. It is therefore a good plan, when baking facilities are not ideal, to compare the wrinkle samples, baked and unbaked, and select the one that shows the least change in color. This means that the change is less rapid or pronounced in the oven, thus allowing more tolerance or time variance.

Attainment of texture uniformity is a much more complex problem. It is dependent on a number of factors of which selection and control of the wrinkles and the operator's skill are the most important.

Varnish Type and Synthetic Wrinkles

It might be well to insert here a brief survey of the different types of wrinkles, analyzing them for both their advantages and their faults. Although the formulas for producing wrinkle enamels are legion, for our purpose they can be divided into two general classifications, namely the alkyd type and the oil or varnish type.

Two characteristics make alkyd wrinkles a little more difficult to spray than varnish wrinkles. When a coat is sprayed, the surface sets up at once although underneath it is quite wet. Subsequent passes with the spray gun are difficult to wet out and judge for depth. Unless a fairly long air-drying period is allowed before the work goes into the oven, the alkyd material will soften momentarily when heat strikes it, thus increasing the possibility of runs where the coating is heavy on a vertical surface.

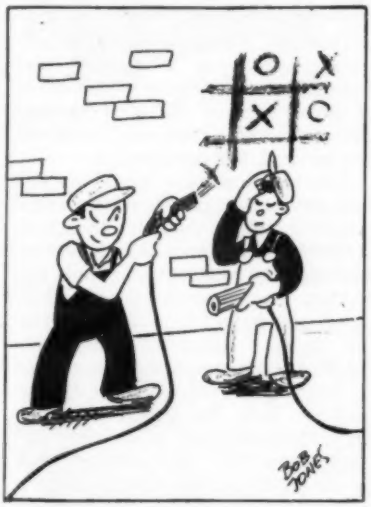
Air Drying Before Oven Baking

On the other hand, these alkyd wrinkles are excellent where the time lapse between spraying and baking must vary greatly. I have seen sprayed parts stand overnight, becoming so dry that a finger nail

would hardly dent the surface, yet they were moved into the oven and and they baked out perfectly. Such practice is not recommended but it does illustrate the flexibility of alkyd wrinkle enamels in this respect.

Alkyd wrinkles, being thermoplastic, tend to soften somewhat each time they are heated. This makes them less suitable for pieces that must be sprayed and baked on one side, then turned and sprayed and baked on the reverse side, as the first side will tend to take the impression of the rack.

The oil or varnish type of wrinkle can be formulated in almost any combination of texture and gloss. When containers are opened the material has a tendency to skin over quickly. However, the remaining material is generally usable, but much of the desirable qualities may be lost through frequent straining. It is better to stock smaller containers and keep a steady flow of freshly mixed wrinkle enamel ready to supply the sprayer.



"Three X's in a row mean '30' to you."

In their spraying and baking qualities the oil or varnish type wrinkle enamels are superior to alkyd wrinkles. The wet coat flows out smoothly; it generally holds well on upright surfaces and does not soften in the oven. In fact, the pattern forms almost at the first blast of heat, later baking fast and hard, with no subsequent softening. Furthermore, although a preliminary air-drying of an hour or two makes no appreciable difference in pattern, the article may be placed in the oven right after spraying. In conveyorized finishing this advantage is obvious.

Both types of wrinkle enamels are equally handsome in appearance, preference being purely a matter of choice. The alkyd coat is tough and flexible and has excellent moisture resistance. The varnish type is extremely hard and resistant to most solvents. These facts are important when subsequent finishing, such as lettering or decorating, is planned.

Give More Thought to Selection of Material

Much of the success of precision wrinkle finishing depends upon careful selection of the material. While it is true that the wrinkle patents are held by New Wrinkle, Inc., and the processes and research are available to all licensees, some paint manufacturers seem to have

more success in this field than others. Perhaps it may be compared to two cooks baking a cake from the same recipe. One turns out a masterpiece; the other a failure—or one that is not quite so good. There are even concerns who make excellent wrinkle enamels in all except one or two colors, which seem to persistently baffle them.

It is only by careful selection of the best available wrinkle enamel, and by consistent vigilence in testing each batch of material that we gain the initial step in our goal toward perfection.

When a sample or trial order is received, my suggestion is to first bring it to a temperature equivalent to that recommended by the supplier, then check the viscosity and make a note of it. A Ford or Zahn cup, or some other viscometer should be used for testing viscosity. Do not resort to the use of makeshifts. Then place the sample in a pressure container and set the atomizing and fluid pressure at the accepted settings.

Spray Test Panels to Discover Facts

Now, take four comparatively small metal panels and mark them A-1, A-2, A-3 and A-4 on the back. Lay them out in that order on a tray. Hold the spray gun at right angles to and at the proper distance from the panels; make one spraying pass over the panels at normal spraying speed. Remove panel A-1 from the tray. Make a second pass over the remaining panels and remove panel A-2. Continue until four passes with the spray gun cover panel A-4. Check the wet film thickness of all panels immediately.

Lay aside the A panels. Take up four more panels and label them B-1, B-2, B-3 and B-4. The entire process is repeated, except that the B panels are sprayed while they are in upright position and they must remain in that position. This test gives us an opportunity to determine at what point sagging occurs, if at all. It is important while making these tests that the distance of spray nozzle from the panel, speed of spraying, and trigger-pull are kept constant.

Allow five minutes for air drying and then place the B panels in the oven, still in upright position. The A panels are laid aside for two or three hours, or as long as the maximum time that is ever likely to elapse before baking. Then they are baked.

Appraising Results of Spraying, Baking Tests

This test just described will give a complete check, between A and B panels, in reference to the effect of air-drying on films of various thickness. After baking, the panels are laid out for comparison.

The ideal wrinkle would be one that produces eight identical panels. However, this is too much to expect. If there is no appreciable difference between any consecutive panels and if they are of an acceptable character, you have found a good wrinkle enamel. Anything more is an excellent discovery. All panels can be kept for future reference or, keeping only the accepted standards, the rest may be stripped and used again. All pertinent data may be recorded on the panel backs. If the product on which the material

(Continued on page 60)

Photos Courtesy of DUO-THERM, Division Motor Wheel Corp.

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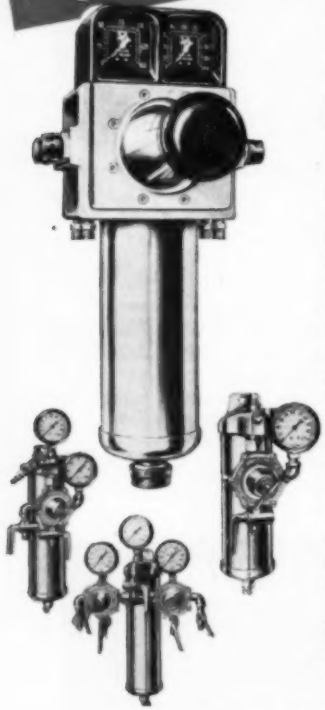

Perfect finishing demands clean, dry air at the right pressure. Foreign substances such as oil, water, dust, rust and other impurities must be removed from the air before it reaches the gun or serious troubles result. Since there is no known method of keeping these impurities out of compressed air lines, the answer is to install a Binks oil and water extractor between the compressor and spray gun.

Binks Model E-75 oil and water extractor meets the ultimate requirements of modern finishing for air-cleaning efficiency and big capacity. It delivers a greater volume—75 cubic feet per minute—of perfectly clean, dry air from which all trace of oil, water or scale have been removed by a combination of gravity, condensation and the highly efficient metal filter that's the heart of the unit. There are no filter packs to buy or renew, no time lost obtaining or replacing them. There is no maintenance cost. The E-75 metal filter is easily cleaned and will last indefinitely. There are no moving parts. The E-75 oil and water extractor drains itself semi-automatically when the air supply shuts down . . . no harm results when operators forget. A manual drain is also provided.

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In addition to the big-capacity, heavy-duty E-75 oil and water extractor, the Binks line includes units of smaller capacity for handling one or more spray guns.

cuts rejects and refinishing

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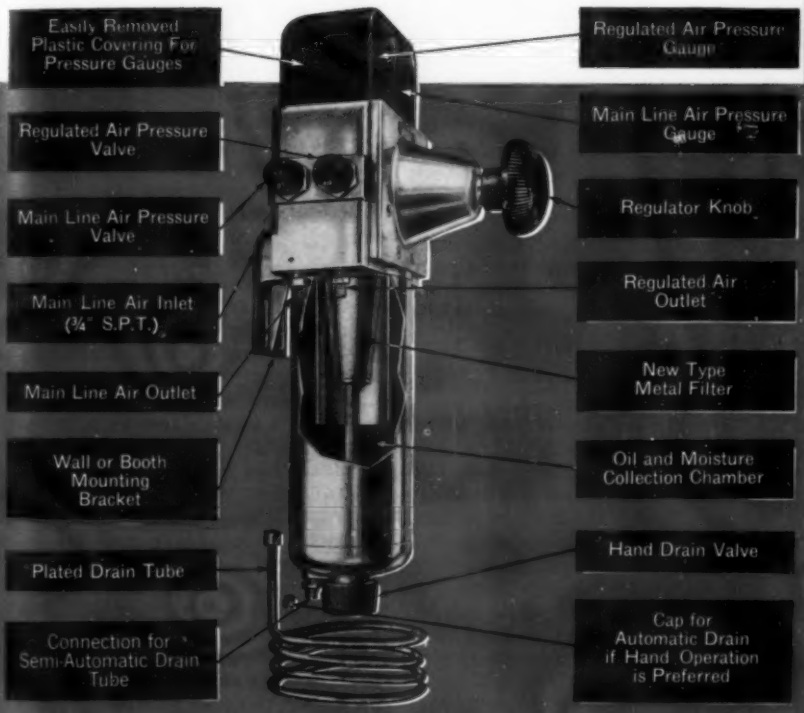
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is to be used includes any castings or parts other than sheet metal, it is wise to make a short test, using one or two of these for comparison.

Assuming now that the finisher has secured the finest wrinkle enamel he can find, the next step is the care and control of the material. First, let me dispose of a misconception to the effect that wrinkles don't keep. To the best of my knowledge, they will keep indefinitely in small well-filled containers. Moderate extremes of temperature do not seem to harm them. A storage place for at least three day's supply should be provided in a room where the temperature never drops below 80° F. and this supply should be replenished daily.

Control Viscosity for Uniform Results

Thinning wrinkle enamel to reduce its viscosity reduces its solid content and is unreliable. It is better practice to control the viscosity through heat. Since summer temperature is easier to maintain in a finishing room throughout the year, it is the preferable standard. Due to its high viscosity, little heat is transferred through wrinkle by convection heat, so any changes in temperature of the material will necessarily be slow. The material in a container must have plenty of time to come up to the required heat; if forcing is resorted to, it is important that the material be stirred occasionally while being treated. It is possible that the new material heaters will have an important role in precision wrinkle finishing.

As I previously said, thinning wrinkle enamel is an invitation to trouble. It has the effect of making the coating thinner and the pattern finer. If any thinning is necessary it should be done consistently and accurately with xylol or toluol as the reducing medium, *in accordance with instructions from the manufacturer.*

Technique of Spraying Wrinkle Enamels

Successful wrinkle finishing calls for the development and practice of spraying technique and skill that will always produce a coating of uniform thickness. A multiple-jet air cap is desirable for perfect atomization of the material. The spray gun fluid-tip should be of small diameter. Sufficient flow can be obtained by using proper pressure at the material container. By this combination a small stream of fluid is well atomized by several strong jets of air. Just as it is important in all types of spraying, *all air lines and regulators should be of sufficient capacity so that no appreciable drop in pressure occurs when the gun trigger is pulled.*

Pressure at the spray gun may have to be as much as 45 to 60-lbs. The lowest pressure that will produce the desired results is the one to use, and whatever pressure is decided upon should be constant for all opperations at all times. Fluid pressure may vary between 10 and 25-lbs. Both pressures are dependent upon the viscosity of the wrinkle enamel used. However, a suitable viscosity, once adopted for each material, should never be varied. Even the fan-shaped setting should be the same for all sprayers—that is for identical work.

While probably it is desirable to set the width of the fan-shaped

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spray differently to suit certain conditions, including particularly the type of parts, products or surfaces being sprayed, I have observed that a fan-shaped spray which is about 6-in. wide at about 8-in. from the nozzle, with the trigger pulled clear back, is satisfactory for a considerable variety of work. I suggest setting the gun to produce this fan-shaped spray as follows:

Holding the spray gun so the fan-shaped spray can be seen, turn the adjustment until the fan shape appears to be about 6-in. wide at a point about 8-in. from the nozzle, with the trigger pulled back to its limit. Now, point the gun at the side of the booth, holding it about 8-in. away, and give the trigger a quick pull. Check the width and shape of the pattern. Set all spray guns in this manner. While spraying, be sure to keep the air caps free from paint.

Good lighting within and around the spray booth is very important, especially the kind of light by which a man can sight along his work to inspect it.

As I previously remarked, all materials should be baked at the same heat and for the same length of time. For batch ovens there are various timing devices, some of which ring a bell when a set time has elapsed. Memory is unreliable; do not depend on it. Trucks loaded with coated work should never be moved into the oven until the oven has come up to heat. When a truck is ready to enter the oven, get it in quickly with as little heat loss as possible through open oven doors.

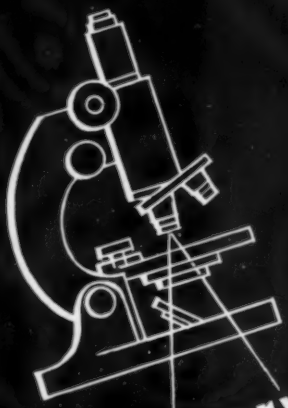
Selection of Sprayer to Follow Best Methods

This brings us to our third and final step, which is the actual spraying of the finish. For this work, the foreman must pick his best men—not necessarily the fastest but those whose technique is the most perfect. Concentration and the quality of being methodical are the chief requirements.

Until the standard procedure for each type of work has been thoroughly worked out, the foreman should take part in the actual spraying himself, learning by doing. Then, once the initial kinks have been ironed out, he can step back and try to detect any fault in the technique that is being followed by his sprayers. He should check the wet film thickness and make the necessary corrections.

All sprayers should follow the accepted standard method for applying the wrinkle enamel to each part or surface. Never deviate from it. The only exception is when a better method is discovered, which will then be adopted and used by all. The spraying of each piece will be started in exactly the same place and will end in the same place, with exactly the same number of strokes applied in the same sequence. Large pieces are then inspected and given an extra touch here or there if they need it. Small pieces are spot checked to detect any faulty spraying habits which may creep in.

Both the sprayer and his helper who removes the work must get into the habit of giving the spray-coated work an appraising glance when it is completed. Emphasis



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should be placed on correcting faults before they occur rather than afterward. Since fluid pressure, viscosity, the spray gun's fan-shaped spray adjustment, and the number of passes with the gun are all constant, the only thing that can go wrong is the human factor.

Spray Work Must Be Closely Supervised

When the foreman is working out a standardized spraying procedure, he will have two purposes in mind: 1) To get perfect results, and 2) to get results efficiently. He will find that with some work, or with some wrinkle enamels the full thickness can be applied at once. Under other conditions this will not be possible; a mist coat will be necessary first, to be followed then by the full coverage coat. In certain complicated work or intricate shapes, it may be desirable to do a bit of careful spot spraying of certain hard-to-reach areas first, and then follow with the uniform general coverage coat.

The technique of correctly spraying various shapes and sizes of parts or surfaces, to produce that uniform thickness coating which is so necessary in the best wrinkle finishing, can be learned in various ways. Personal instruction from an expert is highly desirable—in fact it's practically necessary in some cases—although an intelligent individual, using first class equipment, can learn a great deal through close observation, trial and error, and the development of skill through some coaching and practical experience. Detailed instructions for spraying some specified illustrated work could be set down in print but they would not apply to other jobs, therefore they might be misleading elsewhere and eventually do more harm than good.

Gardner Now Technical Director of P. P. G. Co's Newark Div'n.

Morris G. Gardner has been appointed technical director of the Newark, N. J. paint division of Pittsburgh Plate Glass Co. Mr. Gardner succeeds R. T. Ubben

M. G. Gardner, recently appointed Technical Director of P. P. G. Co's Div'n. at Newark, N. J.

who held that position for six years prior to his recent transfer to the technical directorship of the company's Milwaukee division.

Associated in technical capacities with the paint industry for 30 years, Mr. Gardner joined Pittsburgh Plate's Newark Division in 1935 to supervise technical development and sales work on lithographic and container coatings.

Prior to joining the Newark division, Mr. Gardner was with another paint company for 15 years as chief chemist and later as manager of the varnish department and research development.

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The Resinous Products & Chemical Co., Philadelphia 5, Penna., has been merged into Rohm & Haas Co., a Delaware corporation, with which it has been closely affiliated ever since The Resinous Products & Chemical Co. was founded in 1926.

Rohm & Haas Co. will carry on all of the activities formerly carried on by The Resinous Products & Chemical Co. without change in policy or personnel. The products heretofore sold in the name of The Resinous Products & Chemical Co. will in the future be sold by The Resinous Products Division of Rohm & Haas Co.

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Finishing Metal Doors

By WALTER RUDOLPH

THROUGH THE years the finishes on metal doors, metal trim and mouldings made in the plant of Dahlstrom Metallic Door Co., Jamestown, N. Y., have developed an enviable reputation for long-wearing beauty. When Dahlstrom factory officials talk about finishing, their greatest interest and pride centers around the skilled craftsmen who faithfully reproduce and match many fine cabinet woods, marble grain and special surface finishes, including bronze and white metal, color inlays and stipples.

As a result of its success in the hollow metal door field the concern has taken up the production of numerous metal products and specialties, until now production is divided into two broad categories: 1) contract work for architectural metalworking which includes metal doors and related metal fabrications such as trim; and 2) metal specialties for many large manufacturers.

Dahlstrom metal products include elevator entrances, swing doors, trim and mouldings, equipment for all-steel railway coaches, rolled mouldings and shapes in several decorative metals, custom-made cabinets, stampings, pressed shapes and special parts, light frame assemblies, waterproof boxes and carrying cases.

Today Dahlstrom will design, engineer, fabricate and completely finish any product that is made of sheet metal or roll-formed shapes. Design and finish treatments are extremely versatile. For customers' convenience, a set of 3x5-in. color cards are available. These cards show about 65 standard colors that are prepared right in Dahlstrom's finishing department. Color matching experts in the factory are experienced in matching samples submitted by prospective customers.

Custom Made Products of Sheet Metal

Versatility in finishes might be illustrated by the following typical samples: Grey enamel doors with striping lines in red; bindings and kick-plates in alumilited aluminum; jambs and trim in grey enamel. Doors in matched mahogany graining with applied etched plaques; bindings and kick-plates in bronze. Doors in silver blue stipple with vertical bands in 2-tone blue enamel; striping design in silver enamel.

A space of about 27,000-sq.ft. in the factory is taken up with finishing operations. Two and one-half floors of one of the factory wings are occupied by painting and related work. Freight elevators move large metal racks—practically the only material moving medium—from floor to floor; loaded racks are pushed in and out of ovens. Doors and most other fabrications are

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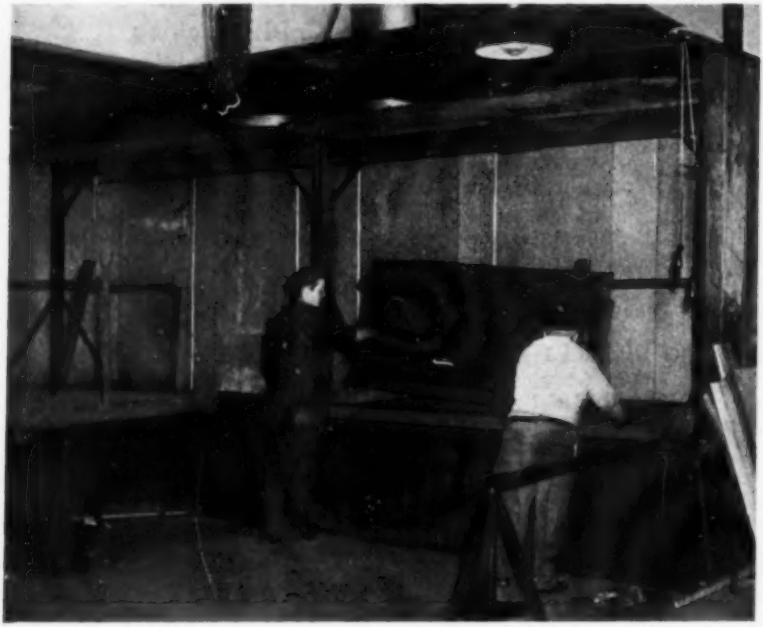
manually positioned in spray booths for spraying and then racked again.

Dalhstrom has its own paint-mixing room on the first floor of the factory. Bulk paints are stored in space adjoining the mixing equipment. Special safety lighting is used to avoid the possibility of explosions due to lamp breakage. Fire prevention equipment includes a sprinkler system, as well as numerous hand-operated devices with special uses.

Doors to be finished come to the finishing department fabricated, in many cases with sound-proofing material within the metal structure. Their surfaces are carefully hand wiped with lacquer stripper. This procedure protects the sound-proofing material from contact with excess liquid, which might easily enter into openings in the hollow door if it were dipped into a cleaning solution.

Practically all metal specialties can be dipped for degreasing. Dahlstrom has a double steel booth for this purpose. The parts to be cleaned are loaded on traveling carts the wheels of which rest on projections of rail about waist high in front of the booths. When a load is ready, workers just push the



This degreasing booth has two elevators, with one on the right loaded and ready for descent into the cleaning tank. At left a mobile carriage is ready for loading.

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cart onto an elevator permanently fixed over the degreaser tank. Hanging control cords are used to lower and raise the load as described, within the closed booth.

Filling and Sanding Makes Surface Smooth

Specialty products move from the cleaning station to a special filling department where scratches, weld marks and any other imperfections are covered and smoothed over with a special filler. The men work with broad-blade flexible putty knives, smearing the filler around and pressing it into the imperfections in metal surfaces to be finished. This filler is then baked.

Both hand and mechanical sanding are next in order. Specialty items and architectural products get hand sanding where this is more expedient, although both air-driven and electrically powered portable sanders are available for use on wide flat surfaces. On doors or large flat areas, belt sanding machines are used to expedite mass production.

Several years ago the company installed the only finishing conveyor that was considered feasible for its diversified production. Approximately 300-ft. of overhead line was installed.

Metal specialties that come from the sanding station are carefully hand-wiped and hung on widely spaced hooks, as most of the specialties must be rotated while being sprayed. They pass in front of two adjoining water-wash spray booths each of which is about 10-ft. wide. The conveyor leaves the spray booths in a left turn to enter a gas-fired oven. Baking cycles range from 30 to 45 minutes, at heats of 150° to 350° F., these variances being occasioned by the extreme diversity in sizes, metals and finishes.

Hand graining the metal moulding around a door frame calls for expert workmanship.

Variations occur in the finishing operations on specialties, depending upon customers' specifications. Some products are rust-proofed before being painted. Many are shipped with only a prime coat, as ordered.

Sequence of Operations in Finishing Doors

Attractive and durable finishes for doors—one of the big production items—have received a lot of study by factory executives, and the procedure used today assures excellent results. After the clean-

ou "out on the limb?"

It's no place to be... That's why now is the time to review your finishing materials and methods. Your finishing costs have a direct bearing on your *total* end-cost . . . going far beyond the cost per-gallon of the finishing material itself.

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Improve overall production and handling economy in your plant . . . by calling on Du Pont. Today, thousands of pretested formulas under the trade names "Duco" and "Dulux" are helping to keep manufacturers' end-costs at a minimum.

FOREMEN, SUPERVISORS, EXECUTIVES: *If you have a finishing problem involving costs, performance . . . or a tough technical "bug". . . write to E. I. du Pont de Nemours & Co. (Inc.), Finishes Division, Wilmington 98, Delaware.*

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ing process, more attention is given to building up a smooth base for the paint job. Workmen lay individual doors out on trestles or "horses" and spread on a special filling material with wide flexible putty knives. This filler is carefully worked over spot welds, scratches, depressions and rough places, and the excess filler is removed by scraping.

Next the doors are baked for two hours at 150° F. The baking ovens, used for baking filler, primer and enamel, are built into locations where they are especially convenient for maintaining a smooth economical production flow in the finishing room.

Following filling and baking, the surfaces are sanded and carefully inspected for surface imperfections. If any patching is needed, an air-drying filler is used. Doors that require repairs are allowed time for the filler to dry before they are moved to the priming booths. The coat of priming paint on doors always matches, within reasonable accuracy, the finish coat so that if future wear or accidents remove any of the top coat finish, the first coat will be of the same color, therefore the worn place will not attract attention.

Final polishing with sheep's wool disc.

Priming Followed by Graining, if Specified

After the priming coat, various stages of sanding, painting and baking—and then perhaps a repetition of the same—are likely to be included in the finishing process, according to the requirements of the product. Here again, both air-driven and electrically powered sanding equipment are available, the fine grit sanding being used just before final polishing.

Naturally, grained finishes call for an entirely different series of operations than those just outlined. Architectural metal work, including doors and frames that receive grained finishes, follow this pattern:

The clean smooth metal first receives an iron oxide or rust-preventative coating, followed by a ground coat over which the graining pattern is applied. The first step by the graining craftsmen is color brushing, according to the wood grain to be matched. Next comes figure brushing. Then the color and figure are blended to the natural soft tone desired; then the wood pores are marked in. Again, the entire finish is softened with a blender brush. The graining is now

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ready for drying (force drying or baking) prior to varnishing. Two coats of clear varnish are usually applied, after which the surfaces are finished by rubbing and polishing to a high luster or egg shell gloss, as desired.

Advice to a New Foreman

I HAVE HAD an opportunity to notice the hardships that a new man, hired from the outside as a foreman, has to go through in order to get acquainted with his new work. In many cases the first month is a terrible strain.

First thing the new foreman has to do is to learn his surroundings and the job ahead. It's too much to try to learn the whole job during the first few days. Some foremen attempt to do this and as a result they start out by carrying a load of trouble. The man who starts out with that type of load on his mind is usually headed for trouble, regardless of his knowledge and experience in the work.

To make good in a new plant a foreman must lay out a plan of strategy, just like a general heading up a military operation. First he should let as much of the work as possible be handled by men who were assistants to the previous foreman. While these men are doing the bulk of the routine and production work, he should get acquainted with the manpower in his department, finding out their peculiarities and attitudes.

Next he should become familiar with the layout of his department, noticing the direction of the flow of production and the departments from which the products in process come. He will do well to get a set of photographs of the entire line of merchandise produced by the firm, and try to learn the names and numbers of the items so that he can identify them and talk catalogue numbers to the management in his daily routine.

He will need to keep a record of the amount of production flowing out of his department, with the thought in back of his mind of doing some changing here or switching there—at an appropriate future time. Next he should check the types of material used; and find out the experience of his men who work at spraying, dipping or roller coating, including their reaction to the merits of certain paints to work efficiently. Then he should make a record, mentally or by notebook, of what he has found out.

At this stage he should be ready to determine the quality of work being done by his assistants who have been carrying the ball for him. He will have to judge their respective qualifications and loyalty, and act accordingly.

This procedure of learning the various aptitudes, attitudes, production flow, method of procedure, paint usages, etc., is a job that should take a period of three or four months. Any management that expects a miracle to be performed in a day or a week will have to be disappointed.

During this trial period the foreman is actually on probation with himself and his firm. He will naturally be careful and watch every step he takes until he gets the reins in his hands and starts driving the team. One of the best ways a new foreman can get his value acknowledged by his new boss is to recommend — after thorough study, and, after he is positive that he can answer the why's—new and more efficient methods and equipment for production efficiency and safety and fire-prevention. It's one of those peculiarities of management to acknowledge with much joy the suggestions of a new foreman, although it gives little if any attention to what an old timer says.—N. A.

Another Distinguished User of AMERICAN-MARIETTA *Finishes*

Photos courtesy The Rudolph Wurlitzer Company.

There's more to finishing a Wurlitzer piano than meets the eye. This Wurlitzer workman is spraying the back of a piano with a special lacquer as protection against moisture and humidity. This extra protection adds years of satisfactory service to the life of a Wurlitzer piano. American-Marietta for years has produced quality lacquers and varnishes, stains, sealers and fillers for piano finishing and fine cabinet work. In addition, A-M formulates special finishes to meet *any* requirement. For a practical answer to *your* production line finishing problem—write, wire or phone the Industrial Division, American-Marietta Company, 43 E. Ohio St., Chicago 11, Ill.

AMERICAN-MARIETTA

Custom Industrial Finishes

Flow Coating

AUTOMOBILE CHASSIS FRAMES

Chief Metallurgist of Midland Steel Products Co., describes and illustrates special equipment and methods used to prime coat chassis frames for automobiles.

By Paul A. Peterson

IN FABRICATING and painting chassis frames for automobiles the emphasis is on strength and durability. Some products are finished to enhance their beauty as well as to provide a protective coating. Take for instance, a car body or truck body which will be mounted on the chassis frame. It is always in view somewhere. It must be attractive. It will be kept clean and polished.

The frame underneath any car or truck is seldom seen. It becomes caked with mud and grime—and during winter, with ice and snow—but it is seldom if ever cleaned. Its prime coat must have good adhesion; must be tough and durable; and the entire frame must be thoroughly coated to protect it against rust.

Powerful Conveyors Move the Frames

Naturally all of the equipment used in connection with the manufacture of these steel chassis frames must be extremely rugged. The shortest chassis frame is 7-ft. in length; the longest is 27-ft. The lightest frame weighs 145-lbs., and the heaviest 865-lbs.

In the chassis painting department of Midland Steel Products Co., chassis frames are suspended in a vertical position, therefore it may be seen that the overhead cross-bar conveyor (cross bars spanning two chains) must support an average weight of 130-tons. This conveyor is 1040-ft. long. It has hooks spaced on 2-ft. centers and it travels at a speed of 11.4-ft. per minute. This gives us a production of 342 frames an hour through the flow coater and oven.

Spray Cleaner; Rinse; Dry-off Section

After fabrication, chassis frames are delivered to the loading station by an overhead crane. The cross-bar conveyor through the washer has drag hooks spaced on 24-ft. centers. This conveyor operates at a speed of 160-ft. per minute. Operators use heavy steel hooks to slide the frame into position on the conveyor bed.

The front end of the frame is mechanically picked up by a drag

Below, Rubbing final finish on piano. Rubbing operation is usually done before units are assembled. With Sundstrand Sander pianos can be finished after assembly due to ease with which contours and mouldings can be followed with this versatile machine. A better finish than with hand block is obtained and saving in time and abrasive paper is considerable.

Below, Sanding surface coat on top of automobiles on a production line. In addition to top of cars, Sundstrand Sanders are used for hoods, door panels, and trunk lids. Oscillation speed of machine produces desired cut, produces smooth finish on undercoat sanding operation and lessens operator fatigue. The latter is an important factor where auto bodies must move in regular speed on the production line.

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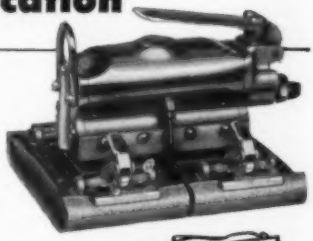

● Two pads reciprocate in a straight line and opposite direction on this sander. End thrust is eliminated making it easy to handle on production jobs. Straight line reciprocation produces better finish on both production and maintenance jobs. If you want a durable, pneumatic, portable sander have a Sundstrand demonstrated in your plant on your work.

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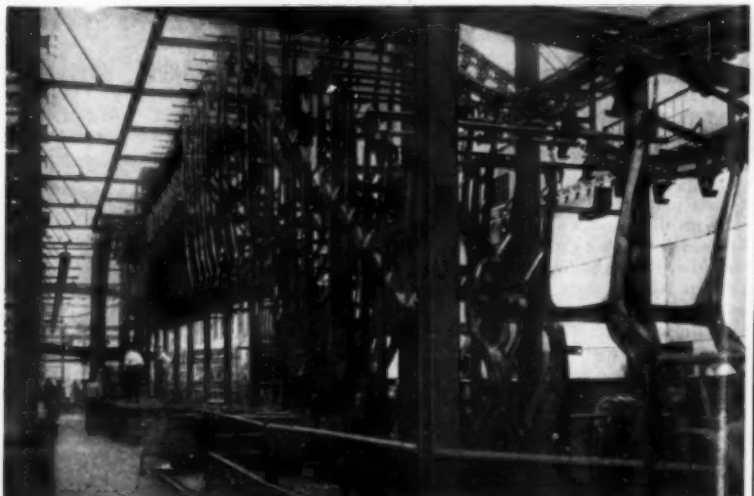
hook and slightly raised as it moves forward, causing the frame to enter the cleaning setup in almost a horizontal position. The back end of the frame slides along in the metal tracks of the conveyor bed.

The reason that frames are run through the washer at about a 30° angle is that less water is required to wash and rinse them when they are in this position, as compared with a vertical position. As it is, the washer consumes water at the rate of 400 gallons per minute.

In the first stage of cleaning a free rinsing silicate-base cleaner is sprayed on the swiftly moving frame at 185° F. and at 45-lbs. pressure. The spray nozzles are located so that every part of the chassis frame is sprayed with the cleaning solution. A 30-ft. drain space follows before each frame enters the rinse section where clear water at 190° F. is sprayed over it. Rinsing is followed by space for draining; then comes an 80-ft. dry-off section where heated air is circulated and exhausted to dry the frame as it rises to the transfer point. Frames are mechanically transferred from their semi-horizontal position on the washer conveyor to a 2-point suspension vertically on the flow-coater-oven conveyor.

Frames Hang Vertically For Flow Coating

To say that frames proceed at a speed of 11.4-ft. per minute through the flow coater, where a film thickness of 2-mills is applied, and then drain as they move along a 120-ft. space before entering the bake oven —this would be quite simple. That



View of crossbar chain conveyor by means of which chassis frames are moved through oven.

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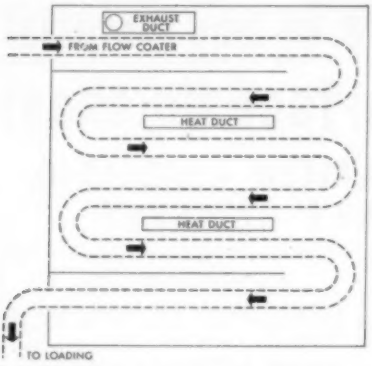

Plan view which shows how the twin-chain crossbar conveyor travels through the oven.

is actually what happens. But it calls for a bit of explaining. First of all, the principle of successful flow coating is to *apply as much paint with as little pressure, in as small a space as possible, to coat the product.* To do this, facilities must be adequate, material must be controlled with ease and safety, and the operation must be properly timed.

An oleo-resinous paint is used for coating the frames. It is composed of carbon black, linseed oil, Chinawood oil and East India gum. The solvent is mineral spirits. The paint and solvent are delivered to the plant in tank cars where the respective materials are pumped into two 17,000-gallon underground tanks close to the railroad siding. These tanks are connected by pipe lines to two 1700-gallon underground tanks close to the flow coater.

The painting machine (flow-coater) consists of two side sections and one cross-head section of 3-in. pipe. Attached to the 3-in. pipes on both sides and on 12-in. centers, are ⅜-in copper tubes. Each copper tube is 12-in. long and has a flow nozzle at the end. The flow nozzles are attached to the copper tubes by hexagon bushings and elbows which may be easily adjusted to direct the spray properly. Also, the copper tubes may be bent to further adjust the paint stream for proper coverage. The position of each tube and nozzle can be predetermined to some extent, but for exact positioning the old fashioned rule of trial and error still prevails.

The paint which is flowed over chassis frames is kept at a viscosity of 30 seconds at 78° F., as measured by a No. 4 Ford cup. Metering valves indicate the quantity of paint and solvent used from the large underground tanks, as well as from the supply tanks close to the painting machine. A visable recorder indicates a continuous Baume test. This recorder is located in the supply line from the mixing tank to the flow coater, and insures uniformity in the coating material.

Safety features include automatic release valves which are capable of emptying the entire system of paint into an underground tank in four minutes. In case of fire, then automatic sprinklers flood the flow coater and pit with water.

Baking the Primer Coat at 325° F.

Chassis frames enter an A-type oven located on the roof of the building where the prime coat is baked for 43 minutes at 325° F. This oven is constructed with two partial partitions extending from

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Durafill is also faster and more economical than the application of successive coats. You simply apply Durafill, pad in, wipe off and clean up. Get the full story of *Durafill* "Fusion-Type" finishes.

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the front wall to a point sufficient to clear the frames on the return at the back of the oven, as shown in the accompanying drawing. Heat ducts are located equidistant between the two partitions in the center section. An exhaust duct (24,000-cu.ft. per minute) is located just inside the entrance to the oven.

The hottest area of the oven is the section between the partitions. However, fume-laden air currents swirl around these partitions, through the frames suspended vertically on the conveyor and out through the exhaust stack. This movement of heated air is a material aid in the baking process. Upon leaving the oven, the chassis frames cool as they travel to the loaders for shipment.

Courses in Practical Finishing Offered Free in Syracuse, N. Y.

The Finishine School for Finishers will be resumed in November, according to an announcement received from E. W. Hagadorn, president of Finishine Laboratories, Inc., Syracuse, N. Y.

The school, which drew a large number of finishers from all over the country last winter, is for both experienced and apprentice finishers. It is conducted without cost for the purpose of improving the skill of finishers generally throughout the country. Latest methods and procedures are covered, and the course includes high-quality commercial finishing as well as the art of repairing, restoring and finishing rare and costly woods, porcelains, marble and other objects of art.

Classes are held at the College of Forestry, Syracuse University, and also at English Manor, home of E. W. Hagadorn. English Manor is famous for its collection of rare furniture, Dresden china and other art objects which have been finished, restored or repaired according to methods taught at the school. Upon completion of the course, a beautiful diploma is presented to each graduate.

Classes will be held on November 8-10, December 6-8 and January 3-5 inclusive. Reservations should be made on business stationery to Finishine Laboratories, Inc., 627 Tallman St., Syracuse 4, N. Y.

Rex Prather Now Represents Grand Rapids Varnish

The Grand Rapids Varnish Corp., Grand Rapids, Mich., announces that Rex Prather has become affiliated with the company.

Mr. Prather is a graduate of the University of Kentucky and served in the Navy for four years during the late war as Lt. Sr. Grade. Prior to joining the Grand Rapids Varnish Corp.'s staff, he served as finishing foreman in one of the country's largest producers of high quality radio cabinets.

Mr. Rex Prather is experienced in modern finishing on conveyor lines.

Mr. Prather is going to serve his company's customers in Northeastern Kentucky, Central and Southwestern Ohio, and Central and Southeastern Indiana. He has valuable and intensive experience in conveyorized finishing, and this experience should prove of definite value to customers of the company.

Starbuck Advanced by Kellogg Division of A. B. S. Co.

William H. Starbuck has been appointed Assistant General Sales Manager of the Kellogg Division of the American Brake Shoe Co. Formerly a sales representative, Mr. Starbuck has served in various sales capacities since first joining the company. He attended Kent School and Yale University. He will be located at the Division's headquarters in Rochester, New York.

Floor Patch or Overlay

Stonhard Resurfacer is used to patch or overlay all types of floors—cement, brick, asphalt, wood, or composition. It makes a smooth, tough, resilient, non-skid, sparkproof and damproof surface that withstands the heaviest trucking and at the same time assures a safe, comfortable footing.

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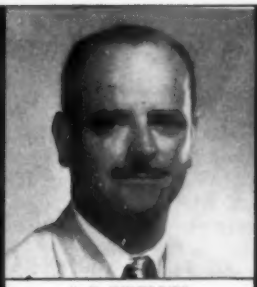

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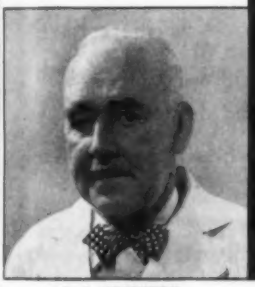

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FULLER INDUSTRIAL FINISHES

SHELLAC in Wood Finishing

By Rollin H. Wampler

What crude shellac consists of, how it is made ready for use, what effect age has on it, and where it fits into the modern industrial picture as a useful material. Wood finishers have long known the merits of wash coats, sealer coats and, in some cases, finish coats of shellac.

MYSTERIOUS INDIA, the land of incredible contrasts (the beauty of the Taj Mahal and the ugliness of life of the common man) and lately of political and religious strife, is the world's sole source of orange gum shellac. One of the oldest of organic finishes, and yet one of the most versatile in spite of competition from synthetic materials, shellac partakes—in the age of scientific enlightenment—of some of the mystery of its mother land.

So complex is the chemical structure of shellac that it is not yet completely understood. For example, why does shellac in orange gum or flake form lose its solubility and otherwise behave as a thermosetting resin upon aging five years or more? Why does bleached shellac in solution lose its hard-drying properties and dry to a sticky film after aging a year? The wood finisher will do well to remember these peculiarities and to realize that some bleached shellacs are better than others, depending on the skill and care of the bleacher.

A Finishing Material of Animal Origin

Shellac is the only finishing material of animal origin. Once a year great numbers of little bugs, Trachardia Lacca, swarm on the lac trees of India. They fasten themselves to the twigs and branches and thrust their little stingers through the bark into the sapwood and suck out the sap for their own nourishment. The sap is changed in their bodies and secreted as a resin which eventually covers the bugs and the twigs and branches. During this time the females lay their eggs, which hatch and produce a new generation.

The layer of shellac kills the adult insects, but the young break through and swarm to new trees. As soon as the young insects have left the tree the shellac crop is harvested. The resin is scraped off and purified. When it is mechani-

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cally clean it is melted and stretched into thin flakes which form the crude orange shellac of commerce.

Crude Shellac Has Wax, Resin and Some Red

Crude shellac contains red coloring matter, shellac resin, and a hard wax. Even though a portion of the coloring matter has been removed, the flakes are now light orange in color. They are dissolved in alcohol to form commercial orange shellac varnish. The wax is insoluble in alcohol, and gives the solution an opaque appearance.

The orange flakes may be completely decolorized by a bleaching process to form the familiar bleached or white shellac, which in solution has a light cream opaque appearance due to the wax, but white shellac gives a clear film so that it can be used on light woods without discoloration. This bleached shellac is the material most widely used in wood finishing of all kinds, including floors and bowling alleys.

The hard wax may be removed from the decolorized resin by filtration so that when dissolved in alcohol it forms a clear solution known as refined and dewaxed shellac varnish; this is sometimes called French Varnish and it is used where the wax is not desired.

Shellac is Soluble in Alcohol and Water

All forms of shellac are soluble not only in alcohol, but also in water solutions of mild alkalis such as borax. A water solution of shellac is often used in the bright-drying emulsions of carnauba wax which form the no-rub floor polishes familiar to every housewife. It is also used by hat manufacturers for stiffening hats and by makers of playing cards and coated paper.

The concentration of liquid shellac or shellac varnish is known as its "cut". For example, when 4-lbs. of dry shellac are disolved in one gallon of alcohol, the solution is known as a 4-lb. cut. In the table below are given the equivalents in non-volatile content (percent of solids by weight) of the different cuts of shellac:

Cut	Non-Volatile
2-lb.	22.8%
3-lb.	30.6%
4-lb.	37.0%
5-lb.	42.4%
6-lb.	46.9%

Shellac is used in hundreds of places in industry. A significant field is in wood finishing. Space is not available here to enumerate the uses that master painters and the home craftsman find for shellac. Its use in floor finishing is well known to all. In this article I shall have to restrict my discussion to its use in industrial wood finishing in order to stay within the space and editorial limitations of this magazine.

Shellac Wash Coat Before Filling

One of the most valuable uses of shellac in industrial wood finishing is as a wash coat before filling. Its purpose in this application is to prevent the excessive darkening of the wood by the filler. This is an important function in the modern light finishes.

For use as a wash coat, commercial 4-lb. or 4½-lb. shellac is reduced with about five times its volume of alcohol. It is applied over

It is traditionally American to strive for and obtain the best in bounteous living!

. . . . *and fine finishes contribute mightily*

Manufacturers concerned with the sales appeal of their products, give earnest contemplation to the selection of product coatings that harmonize with design, yet impart all the refinement and wholesomeness that goes with fine living.

Stille-Young supplies many concerns with outstanding finishes — some standard, some formulated to special purposes. For instance, there are standard all-purpose finishing materials in the Stille-Young line, or we will make for you any type of lacquer, sealer, stain or filler which your particular process may require.

STILLE-YOUNG
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wood surfaces stained with water stain or non-grain-raising stain. When the wash coat is dry (in one or two hours) the surface is sanded lightly with fine sandpaper, and the filler is applied. Although a number of other materials are used for wash coating, many finishers like shellac because of the clean, easy wiping of the filler which it makes possible.

And as a Sealer Coat Over the Filler

Shellac is also used as a sealing coat over the filler, although lacquer sealers have replaced it for this purpose in most plants. Whether this is good or bad it is not for me to say. However, some of the easy-sanding lacquer sealers in common use are not equal to shellac in toughness and adhesion. This is not to imply that lacquer sealers cannot be as good or better than shellac for the purpose. It is simply what I have observed in industrial wood finishing.

Shellac has much to recommend it as a sealer. It dries quickly enough to be used on conveyor systems. A thin coat of shellac can be sanded after about an hour of air-drying. Varnishes adhere to it very well, although not all lacquers will perform satisfactorily over it.

A coat of varnish shows excellent body and gloss over a coat of shellac. For use as a sealer coat, shellac (4-lb. or 4½-lb. cut) is reduced with 50% to 100% of its own volume with alcohol. It must not be flooded onto the surface, as this would most certainly cause an orange peel effect. Only a wet coat of uniform "thinness" is required.

In order to hasten the drying and minimize the tendency to orange peel, some finishers prefer to add what is known as a mixing lacquer to the shellac. One good mixture is two parts of shellac, one part of mixing lacquer, and two or three parts of denatured alcohol.

Shellac is particularly valuable as a glazing sealer. Commercial glazes wipe clean and easy over a coat of shellac because the shellac film is not readily softened by the solvents in the glazes.

Someone sprayed a white stripe down the the shop cat's back.

Shellac Sealer Prevents "Bleeding Through"

One valuable use of shellac is to seal down stains that would otherwise bleed into the topcoats. Oil-soluble wood stains, creosote, and other oil-soluble coloring materials may bleed through and cause s-

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- SAVES MATERIAL
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- CUTS REJECTIONS

The THERMATIC Spray Unit heats the material being sprayed to the proper temperature required and maintains constant circulation of the material for perfect finishing results. When sprayed hot, material levels out to a smoother, more uniform finish equal to two or more coats by ordinary methods, since a greater film thickness can be applied without danger of sagging. Fully dependable and fool-proof, with every conceivable safety factor BUILT-IN.

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Assures minimum temperature drop at the Spray Gun and prevents overheating of the material being sprayed.

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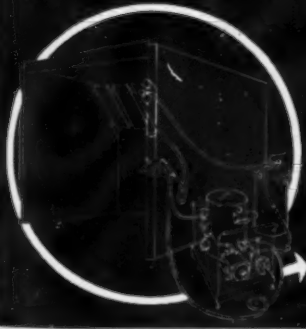
All Electrical Equipment is explosion proof to ensure maximum safety — always an important factor with M & E Design Engineers.

FULLY AUTOMATIC

Temperature range is adjustable from 100° to 200° Fahrenheit and automatically maintains the desired temperature.



The THERMATIC Spray Painting Unit can be adapted to any standard spray finishing system as illustrated. Easy to install . . . Simple to operate.

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"ALWAYS IN STEP WITH THE FORWARD STRIDES OF THE FINISHING INDUSTRY"

M&E MANUFACTURING COMPANY

Engineers • PAINT SPRAY FINISHING SYSTEMS • Designers

INDIANAPOLIS 5, INDIANA

rious trouble. This bleeding may be stopped by a thin coat of shellac sandwiched in somewhere in the system. There are also shellac-base enamel undercoats which will serve the same purpose.

Shellac is one of the few resins not affected by the volatile cedar oil which is responsible for the aroma and moth-repelling properties of cedar wood. For this reason it is sometimes used, with or without mixing lacquer, for the complete finishing system on solid cedar chests. Whether or not it is used for the final coats, as a sealer coat it holds the oil in the wood and prevents it from softening the varnish or lacquer topcoats.

A thin coat of shellac is often used on the inside of cedar chests to retard the loss of cedar oil, which loss makes the chest worthless for repelling moths. It should be emphasized that this coat must be very thin, not over 5% in solids; otherwise it will seal in the oil too well. The use of shellac for this particular purpose is covered by patents.

French Polishing; Shellac Finishing

Some furniture (that which is made in small shops, usually) is still finished by the time-honored method of French polishing. This involves building up a comparatively thick coat of shellac on the surface by hand, using cloth pads for the purpose. This process requires considerable skill, and is not adapted to high speed production. However, there are some craft shops where furniture is finished by this slow laborious method. The finish dries quickly and it is durable.

In fact, in certain custom shops some furniture is finished entirely with shellac. The final coat may be steelwooled and waxed, or it may be rubbed in the conventional manner. When such films age, they become quite hard and tough and will withstand most solvents quite well. Shellac, however, is not as water-resistant as many varnishes and lacquers.

Precautions to Observe

There are a few precautions to observe when using shellac. First, be sure to use only fresh shellac, because shellac that is old may not dry well. Second, shellac must be kept in wood, glass, or lead-lined (terne plate) containers. Plain iron is attacked by the shellac, and the iron contamination of the shellac will affect its color and drying properties. Third, be sure to stir shellac each time some is to be withdrawn, because the wax will settle to the bottom in a fluffy layer. Finally, always protect shellac in storage from extremes of temperature.

Shellac finds its way into some products of the finishing materials industry, so that the wood finisher may be using materials of which shellac is a component without realizing it.

Shellac and alcohol are both high in price today. The erratic price of shellac has, to some extent, limited its use in wood finishing. In modern large-scale wood finishing operations, varnishes, lacquers and so-called "synthetics" comprise the vast majority of materials used for topcoats. However, shellac is a unique and useful finishing material, and some of it is used in nearly every wood finishing department.

is your problem **black** *or* **white** **?**

here is your answer . . .

● Through the Watson-Standard continuous program of "Quality through Research" we have developed a wide range of black and white coatings which cover the field of service coatings, ranging from ordinary type to highly technical product finishes.

These finishes may be custom-formulated or stock items which meet all requirements for brilliance or dullness, air dry or baking, roller-coating or spray, dip or brush, and are available in synthetic, oleoresinous, alkyds or vinyls.

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Give us your coating problem. We guarantee you an answer based on your conditions, and not just a standardized formula.

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Want the kind of shine that sells . . . that makes your product glow with showmanship? Then, Sea-lac's your finish . . . whatever your product. You can always trust Sea-lac lacquers, enamels and synthetics to shine 'em up for sales.

DURALAC CHEMICAL CORPORATION

LISTER AVENUE, NEWARK 5, N. J.

How to Cut the Cost of Spraying Sunken or Raised Areas of Metal or Plastic Parts

One color right after another can be wet painted before baking, on many concave, convex or irregularly shaped three-dimensional parts, with

Electro-Formed Metal Masking Templates

Clean, sharply defined letters and effects are obtained on intricately designed emblems, nameplates, automobile and radio dials, hub caps, horn buttons, and household appliance utility markings.

A thin, yet strong, lip of metal which fits accurately into the edge of the debossed areas, eliminates fogging at the edge of the paint line, and avoids after-wiping or buffing off of overspray.

By special arched bridging, the "loose" inside of letters and numerals, such as "O" and "6", are held in position to effect perfect characters without the use of objectionable "ties" necessary with common stencils.

Can be fitted to fixtures on production lines. Used on hundreds of nationally known products.

CONFORMING MATRIX CORPORATION
331 TOLEDO FACTORIES BLDG., TOLEDO 2, OHIO

I am interested in your metal masking shields. Please send without obligation:

( ) Further information
( ) Sample masks
( ) Quotation on masks for parts or prints being forwarded.

Name.....
Firm.....
Street.....
City..... State.....

Krypton Gas, discovered some 50 years ago, has had little use by science until recently it was found to increase the efficiency of fluorescent lamps. Krypton is a rare gas which occurs in the air in the ratio of about one part to one million. When used in fluorescent light tubes, their efficiency is increased so that an 85-watt lamp will produce as much light as a 100-watt lamp, and will last equally as long. Only recently has this gas been produced in sufficient quantities for large scale production at reasonable cost.

Substitution of krypton for argon filled lamps offers industry a possible saving of 17% in electric costs.

Du Pont Patents Offered

The Du Pont Co., Wilmington, Dela., announces that it is listing a number of its patents on the Patent Register of the U. S. Patent Office as available for licensing.

The company says that 4260 patents, which are about two-thirds of the patents the company owns, and which cover many phases of its diversified operations, have been submitted. The first official listing of DuPont patents is expected to appear in an early issue of the Patent Office Gazette.

Hartwick, Techincal Director of P. P. G. Co. at Houston

Otto J. Hartwick has been appointed technical director of the Houston Paint division of Pittsburgh Plate Glass Co. Mr. Hartwick has been associated with the paint industry since his graduation from New York University in 1921 as a B. S. in Chemical Engineering. At the university he was president of the senior class.

Otto J. Hartwick, has been made Technical Director of the Houston Division for P. P. G. Co.

Prior to joining Pittsburgh Plate's Newark, New Jersey paint division in 1926, Mr. Hartwick served as a lacquer chemist with companies in the east.

Since his association with Pittsburgh Plate Glass Co., Mr. Hartwick served as lacquer and paint chemist at the Newark and Milwaukee plants prior to his transfer to the new Houston plant as chief chemist in 1941.

SIX GOOD RULES. A finisher friend of mine made a list of six rules which he regards as important for the finishing foreman. Because they are of general interest I am listing them here:

1) Keep all containers of material closed to prevent skinning, evaporation, contamination by dust from the air.

2) Discard used rags every day, because they constitute a fire hazard.

3) Do all color matching *under* varnish or lacquer. The topcoat changes the appearance of a stain or a filler.

4) Always measure quantities of materials accurately. This applies to reduction of materials as well as to materials made up in the finishing department. Make sure that accurate scales and measuring containers are available at all times.

5) Make sure that the inventory of raw materials is adequate for the production anticipated within the next four weeks.

6) Make the rounds of every finishing station at least six times each day, watching for defects and possible means of improvement.

While several other suggestions or recommendations could be added to this list, it certainly constitutes an excellent working code for the foreman finishers of today.—ROLLIN H. WAMPLER.

A Distinctive **DECORATIVE** *Finish*

KIRCO

ONE COAT HAMMERTONE

Attractive uniform texture . . . Easy to apply . . . Foolproof . . . Durable . . . Available in a wide variety of shades and tones . . . Sample panels to meet your specifications sent on request.

All Exterior and Interior Surfaces of the Freedom Train are finished with KIRCO Lacquers, Synthetics and Adhesives.

KIRCO MODERN COATINGS

Kirker CHEMICAL COMPANY

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Bleached Finishes

I have seen a reprint of Edwin Hogstrom's article on how to produce Bleached Blond, Harvest, etc., effects. May I have a copy of it? Can you suggest a book that gives a fuller description and can you tell me of a specific course where I can obtain the materials for these various blond type finishes on mahogany?—M.H.

You probably refer to the article published in February 1946 issue of this magazine. If so, we can send you tear sheets of the article.

In a letter we are naming several manufacturers of bleaching materials for bleaching the color from wood. These concerns can supply you with information about how to use the materials.—ED.

Flock Finishing

I have been informed that you can furnish tear sheets on up-to-date methods of flocking. Will you please send me everything you have on this subject or, if you prefer, send a list of pamphlets available, together with prices, and I will order them and send check.—J.S.

Our flock articles have been so much in demand that the supply of tear sheets of past articles and the one or two sets of reprints made, are nearly exhausted, but we are sending you two articles. Others will be published later.—ED.

Putty for Nail Holes

On page 86 of July issue there is an inquiry for a putty for filling nail holes, etc., in trailer manufacturing. Your inquirer asked for a putty which could be colored to match Ponderosa Pine.

We believe that our B-3 Plastic Putty will fill his requirements because it is a thermoplastic compound containing no oil; it dries rapidly, sands easily, has excellent adhesion to metal, wood, etc.; it provides a good base for varnish, paint and lacquer, and it never dries out or becomes brittle. Its natural color is pure white but it can be tinted easily with colors in oil to match any shade.—Plastic Coating Co.

Dry Paint Sludge

In the May 1948 edition of "Industrial Finishing," page 96, reference is made to the dry paint sludge problem, and it would be appreciated if you would forward us any articles you may have covering this particular problem.—A. Metal Products.

We are giving you the names and addresses of a few concerns who can probably help you with your sludge problem. —ED.

Non-Blister Bake Finish

Would you please send me a copy of the article in the June 1948 issue of "Industrial Finishing," entitled "Non-Blister Bake Finish on Aluminum Castings", as published on pages 51, 52 and 54? One of my customers is very much interested in having this, as only today I was discussing this very matter with him.—C. U.

Copy of magazine sent.—ED.

Who Makes "Old Colony Industrial Finish No. 6643"?

Mr. J. P. Cadden, 312 W. Biddle St., Baltimore, Md., suggested that I write you for information regarding a particular finish I am trying to locate. The finish in question is "Old Colony Industrial Finish No. 6643". Any information you can give me as to where it may be purchased will be greatly appreciated.—M.H.

In the National Paint, Varnish & Lacquer Assoc. Trade-Mark Directory, we find four concerns that sell paints under the trade-mark "Old Colony", but it is questionable whether any of these have what you are looking for, although it is possible. In a letter we are submitting their names to you.

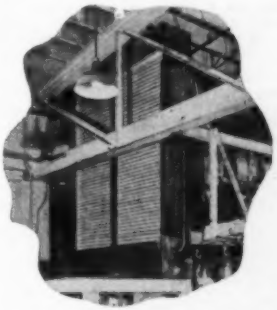
Can some reader please tell us about this?—ED.

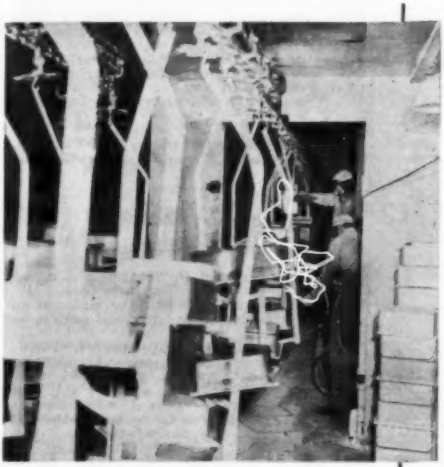
Automotive Articles

Mr. E. E. Hoffman, Director of Industrial Finishes Division of the National Paint, Varnish & Lacquer Assoc., has advised me that you have published a number of interesting articles on automotive finishes. I would greatly appreciate your cooperation in forwarding me a set of tear sheets of any of your more recent

Clean make-up air CUTS COSTS

AAF Filters keep dust out and quality up in finishing operation





Spraying white baked enamel finish on Reynolds stamped aluminum "hydraters" for modern refrigerators.

WORKER comfort demands fresh make-up air. Quality finishing requires that such air be free from dust and dirt. Both are provided for in this operation at the Reynolds Metals Company, Louisville, Ky., through the use of AAF Air Filters.

Here, as in scores of finishing departments, AAF Multi-Duty Filters were selected for the job. These fully automatic, self-cleaning filters deliver a constant volume of fresh make-up air free from trouble-making dust and dirt. Result—workers enjoy maximum comfort and rejects caused by dust-specked finish are practically eliminated.

American Air Filter's complete line of product offers a type and size unit to meet the air cleaning requirements of every industrial finishing operation. For further information, see your local AAF representative or write direct to—

AMERICAN AIR FILTER COMPANY, INC.
210 Central Avenue, Louisville 8, Ky.
In Canada: Darling Bros., Ltd., Montreal, P. Q.

AAF

AIR FILTERS
AND ELECTRONIC PRECIPITATORS

articles, as I am making a study of this subject. Also, please send me a sample copy of "Industrial Finishing" Magazine. —C.F.C. (Industrial Consultant).

We have published many articles about various phases of automobile painting and finishing. In a letter we are sending tear sheets of a few of them.—ED.

Luminous Paints

In the August issue of "Industrial Finishing," under the heading of Random Comment, is a short article on luminous paints. We have just received an inquiry concerning this problem. Will you please forward any information you may have, including source of supply, to our Works Laboratory, Chemical Section, Philadelphia Works, Phildelphia, Pa.?—G.E.Co.

The writer of "Random Comment" suggests that you write the Lumite Division of Chicopee Mfg. Corp., 47 Worth St., New York 13, N.Y.—ED.

Waterproofing Oil

Referring to your July 1948 issue, we notice in the Question & Answer column, one of your writers refers to a waterproofing oil for use on wooden plugs as a base coat, one in particular which is marketed under the name of "Lion Oil". Will you please give us the name of the firm who makes this material?—E. Co.

According to our records it is a product of Berry Bros., 211 Leib St., Detroit 7, Mich.—ED.

Shellac as a Sealer Coat

I read "Industrial Finishing" Magazine every month and pick up some useful information regarding wood finishing.

Although our English methods of finishing are different from yours, we do use shellac or button polish as a sealer. I cannot agree with some of your correspondents who advise brushing or spraying, which causes chipping, orange peel, difficult sanding, etc.

The best method, we believe, is "Wetting in" or "Fad". This is a process of French polishing, but it is suitable for lacquer or varnish finishing.

After the stain, fill and sand, saturate a cotton wool fad [pad?] or rubber with shellac, squeeze out about half the quantity and cover with linen. Apply when possible the same direction as the grain of wood, using a firm pressure; wipe off any whirls of excess shellac with the same rubber.

You will find that this method helps further to fill the pores, at the same time keeping the job flat. It requires light sanding after about ten minutes with a very fine sandpaper, No. 7/0 or 320.

The saving of shellac is enormous. Although it takes longer to apply than spraying, time is saved in the sanding and you get the sealer where it is wanted —in and not on the wood.—W. H. Birmingham, England.

The method you mention is well known to many of our old craftsmen and finishers in small custom shops. It is used only where the time required and the labor cost are of no consequence. It would be prohibitively high priced to use on furniture or cabinets that are made on a production basis.—ED.

Want Bake Enamel

We are looking for a baking enamel for coating aluminum sheets—an enamel that will retain a bright finish with eye appeal for at least two years outdoors and in cities along the coast where climatic conditions are severe on paint finishes.

We are manufacturing identification signs for a large manufacturer who distributes them in every state in the union and Canada. It is obvious that these signs must retain eye-appeal for a number of years. Can you refer us to a manufacturer of such durable materials?—L. Bros.

Look over the advertising pages of "Industrial Finishing" and you will find several.—ED.

Measuring Meter for Paints and Lacquers

We are interested in obtaining a measuring device which will attach to a paint pressure pot and indicate the amount of paint used in painting any one article or several articles.

We are in the furniture manufacturing business and use spray guns in painting our products; therefore, we would want the device in order that we may tell how much undercoat or enamel was used in painting a chest, vanity or any other of our items that we manufacturer.

We believe that not so long ago, we saw one of these devices written up in your magazine.—B.Mfg.Co.

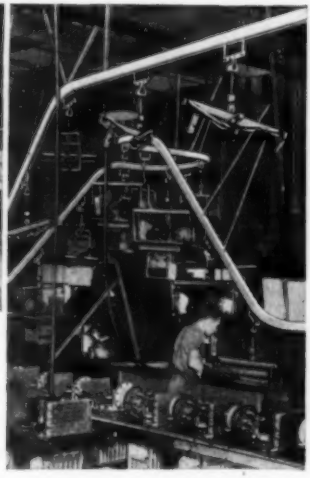
We also have been inquiring for such a device, but so far have not found a concern that supplies meters for just the purpose you mention.—ED.

Fume Scrubber or Burner

I have been advised that you may have some information that will lead me to some one in Chicago who is qualified to construct an efficient fume scrubber or burner. If you have such information I will be very grateful for any efforts you may expend to enlighten me.

So far I have been trying unsuccessfully for about two months to find some

Eggs or Electrical Appliances...



Richards-Wilcox

ZIG IN AND AROUND UP AND DOWN **ZAG**

Continuous Power Conveyor

Solves Production Problems

There is practically no limitation to the purposes for which ZIG-ZAG Conveyors can be used. Designed to carry light loads within a confined space . . . to break "bottlenecks"... ZIG-ZAG adds efficiency and economy to any production line . . . advantageously handles anything from eggs to electrical appliances. Find out exactly how the revolutionary R-W ZIG-ZAG Continuous Power Conveyor will benefit your production-picture. Consult our engineers at the Richards-Wilcox office most convenient to you. Write or call today.

1880 • Over 68 Years • 1948

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"A HANGER FOR ANY DOOR THAT SLIDES"

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Branches: New York Chicago Boston Philadelphia Cleveland Cincinnati Washington, D. C. Indianapolis St. Louis New Orleans Des Moines Minneapolis Kansas City Los Angeles San Francisco Seattle Detroit Atlanta Pittsburgh

Enclosed Chain

Engineered for Economy and Flexibility

- Horizontal and vertical units alternate in a continuous chain traveling through special steel tubing.
- Complete flexibility for installation in any plant. Easily installed, easily changed to conform to plant alterations.
- SAFE—all moving parts fully enclosed.
- Low first costs. Low Power Factor.
- Standard horizontal or vertical curves —two-foot radius. (Stock load pendants including automatic turning units available.)

one who is qualified to do this work, so I'll be waiting for your reply.—C.S.

An illustrated article on this subject was published on pages 78, 79, 80 and 81 in January 1938 issue of INDUSTRIAL FINISHING Magazine. We do not seem to have an old back copy of the magazine from which we can send you tear sheets of the article, but we feel sure that you can find one of these issues of the magazine somewhere in your city, perhaps at your Public Library or in some of the manufacturing plants where they have kept these copies. The article in question was written by Mr. Elton Sterrett, and was based on Mr. Sterrett's own practical experience.

We suggest that you refer your problem to one of the several firms that specializes in the installation of cleaning, painting, heating and ventilating equipment—see advertising section of this magazine.—ED.

Luminous Paints

In August issue of INDUSTRIAL FINISHING, I noticed an article in Random Comment in regard to luminous paint. Would you be kind enough to send me the name of a few of the manufacturers of this kind of paint?—J. B.

In a letter we are naming several firms that can supply what you want.—ED.

Fast Drying Poster Silk Screen Paint

We are writing to ask whether you know of any concern that manufactures a fast-drying poster silk screen paint. We apply this over a coating of synthetic enamel, consequently it has to dry in a short period of time for packing.—S. L. Co.

In a letter we are naming several sources of supply for this material.—ED.

Heating Shop in Which Exhaust Fan Operates

We notice in Questions and Answers of August 1948 issue, on page 96, an item headed, "Heating Shop in Which Exhaust Fan Operates". We gather from the article that your subscriber is interested in heating air input supply, and as we are at the moment doing a job of this very nature for a firm of national reputation, we are wondering if we can help your subscriber who signs himself, "L.I. Co."?—G. Co.

Yes, in a letter we are giving you the name and address of L.I.Co. (in Long Island City) who happens to be reasonably near you.—ED.

To Coat Small Eyelets

Several months ago we furnished a customer in Hong King, China, equipment for manufacturing small eyelets of soft brass. We have recently received a request in which this same customer mentioned that they are interested in purchasing equipment for painting eyelets.

The painting equipment should be suitable for finishing 15,000 to 18,000 parts per hour. Based on this production, we assume that automatic or semi-automatic equipment will have to be furnished.

We shall greatly appreciate your putting us in touch with a manufacturer who is in a position to furnish this equipment. If possible, we would prefer to deal with a manufacturer in our vicinity (Chicago) so that a sales engineer could contact our office personally.—D. M. Corp.

Investigate the Ronci Speedip Whirl Enameler, which is advertised every second month in this magazine.—ED.

Shakespeare, Technical Adviser in Regolac Div'n. of Titanine

E. Harold Shakespeare has been appointed technical adviser in the newly formed Regolac Division of Titanine, Inc. of Union, N. J. Mr. Shakespeare will assist in developing and rounding out a new line of industrial finishes for metal, paper and fabrics, including the development of coatings for cellulose and synthetic materials in the high polymer group. Titanine is a large producer of aircraft finishing materials.

E. H. Shakespeare will assist in developing new industrial finishes for Titanine, Inc.

Mr. Shakespeare is Chairman of the Technical Training Committee of the New York Paint, Varnish & Lacquer Association which recently established a course in protective coating engineering at the undergraduate level at New York University. He was formerly with another paint manufacturer for 26 years and is a graduate of Mt. Herman Preparatory College (Mt. Herman, Mass.) and was graduated from the Newark College of Engineering in 1923.

EXTRAS . . .
AT NO EXTRA COST

● Perfection Synthetic Flat Finishes are made by a new and different method process where flattening is accomplished by means other than foreign flattening agents. These are the EXTRAS in Perfection.

● A Beautiful Rubbed Effect Appearance
● Water-proof and Liquor-proof
● Free From Orange Peel
● A Perfectly Clear Finish to Bring Out the Utmost Beauty of Wood and Stain
● Will Dull Rub or Take a Mirror Polish
● Will Not Haze or Sweat Back

Perfection costs no more even with all these extras. To judge for yourself write for free samples. There is a full range of sheens.

PERFECTION PAINT & COLOR COMPANY
715 E. Maryland St., Indianapolis 2, Indiana

Perfection SYNTHETIC FLAT FINISHES
WATER-PROOF LIQUOR-PROOF

To Tint White Baking Enamel Gray

We have a quantity of white baking enamel we wish to tint a dark gray. Nigrosine has been recommended. Where can we obtain this?

Do you have any other recommendations to change white to gray? We have tried lamp black but find it is not ground fine enough.—A. M. Co.

Nigrosine is not satisfactory for tinting white baking enamel to a dark gray. Nigrosine is a dye, which is likely to bleach out at baking temperatures. Also, there is serious danger of "floating", that is, of the color coming to the top in varying amounts, which will cause the enamel to produce a mottled finish. Finally, there is also danger of seediness and general incompatibility of the dye with the solvents in the enamel.

The only really safe way to do the job is to ask your supplier for black enamel made of lampblack and the vehicle used in the white baking enamel. Then you can blend your enamel for the desired color. Of course, the supplier should understand what the black enamel is to be used for, and he should be given a sample of your white enamel, unless he made it himself. He should understand that the lampblack must be well dispersed. Commercial lampblack ground in oil will not do the job.

Even with a lampblack enamel, there is some danger of floating. You will get best results by tinting the enamel and allowing it to stand a few days before using it. If you follow these precautions you are quite likely to get along all right.—R. H. WAMPLER.

Nigrosine is the last thing in the world that should be used. In the first place, nigrosine is a soluble dye and as such it will have a tendency to bleed. Secondly, it has a bluish undertone and will not make an attractive gray. Thirdly, I doubt if it would be soluble in the solvent used in enamel and if it were added to it, it would probably flocculate out.

Lamblack is the think to use. It yields a soft, pleasing gray. Of course it must be added as a finely dispersed paste, but such a paste in a suitable vehicle should be obtainable from any manufacturer of industrial finishes. I am wondering why you do not turn the problem over to your supplier of finishes. If you know whose material it is, the safest thing to do is to contact the manufacturer, giving him the necessary serial or batch numbers, and ask him to supply a suitable tone paste.—PAUL O. BLACKMORE.

Lamp Cord Discolors Lacquered Furniture

We have had considerable trouble with the synthetic lamp cords and any other synthetic-rubber-based object, causing the finish, where it contacts the synthetic rubber, to turn a deep brown color as if it were burned. We use a lacquer finish on our wood products.

Can you give us any information as

Everything for the Finishing Room . . .

LACQUERS
SEALERS
STAINS
FILLERS
SYNTHETICS
PRIMERS
WOOD BLEACH
VARNISHES

The Gilbert Spruance Company
RICHMOND AND TIOGA STREETS
PHILADELPHIA 34, PENNA.

to how we can overcome this difficulty? Do you know of any other furniture factories that have had the same trouble?—S. I.

You are apparently experiencing trouble because of poor burn resistance of nitrocellulose lacquers. If this is a serious problem with you I would suggest that you investigate the possibility of using a different finish, such as the low bake urea-alkyd finishes which are resistant to burning from lighted cigarettes, matches, etc.

In a 2-coat system the first coat of this material is usually baked one hour at 140° F. and the second coat two hours at 140° F.—L. E. MARTIN.

I have encountered this difficulty only once, and can only explain how the problem was solved in that case. The wood objects were small and were finished with lacquer. We found that by changing the finish to bleached shellac, or to a shellac-base lacquer, no discoloration occurred. Since the insulation used on lamp cords may vary widely in composition, you cannot be sure that this solution will work in your case.

It seems to me that by changing the type of insulation on the lamp cords you may lick the problem without changing the finish. Some types of insulation come coated with a special lacquer which prevents discoloration of whatever it touches. Perhaps your best approach is to ask the supplier of the cords for different types of insulation. You can obtain samples, and by experimenting determine the type which will give the best results. —ROLLIN H. WAMPLER.

The problem involving the discoloration of your furniture finishes, where they come in contact with lamp cords, is attributable to the presence of sulphur compounds in the form of accelerators present in the rubber. Sulphur and oxygen behave quite similarly in a great many chemical reactions.

The reason that drying oils, and synthetic resins and finishes containing them, dry is due to the chemical reaction of oxygen at the unsaturated double bonds in the molecule. Sulphur reacts with equal facility and since most reaction products of sulphur are dark yellow in color, the result is a severe discoloration of any object in which the reaction occurs.

Since the furniture manufacturer will have no control over the type of lamp cords with which his furniture comes in contact, the only alternative is to obtain a finishing material that shows little or no attack by the sulphur compounds present in rubber. You should refer this problem to your finish supplier. There are synthetic resins available whose affinity for absorbing oxygen and sulphur is of a very low order, and your finish manufacturer probably knows which resins these are. To the best of my knowledge that is the only solution to the problem.—PAUL O. BLACKMORE.

Drying Room for Furniture

We manufacture furniture which we finish in lacquer. We are installing a new drying room, the size of which is about 24x16-ft. with a 10-ft. ceiling. Kindly send us some information as to temperature, ventilation, etc.—B. F.

In order to force-dry the lacquer on your furniture satisfactorily you must consider two things—temperature and air movement. The temperature to use will depend upon the drying time you desire or plan to allow. Overnight (15 hours) at 110° F. to one hour at 130° to 140° F. are the two practical extremes. *(To page 108)*

NEW PERIOD
Production Finishes
BAKING ENAMELS
LACQUERS SHELLAC
ENAMELS FILLERS
SEALERS SUPPLIES
PRIMERS STAINS
SYNTHETICS VARNISHES
A Fine Finish for Fine Furniture
New Period chemists constantly work to build better finishes . . . faster schedules . . . at less cost.
SEALERS—Provides excellent body, dries fast and sands easily.
LACQUERS—CLEAR & SEMI-GLOSS. Uniform and dependable—Suitable for coating almost any surface—Provides more coverage and unusual mileage. Cuts costs.
LACQUER ENAMELS—FLAT & GLOSS. Available in a wide variety of matched colors and shades. Widely used by leading manufacturers.
SYNTHETIC ENAMELS—A durable and trouble-free finish for fast production. Built to meet the most exacting production schedules.
FILLERS and STAINS—New Period has long been famous for its Fillers and Stains. Specially formulated for mass production use. Unequalled color-matching service.
Remember New Period Finishes for Quality and Service
MANUFACTURERS OF FINE WOOD AND METAL PRODUCTION FINISHES
NEW PERIOD Production Finishes
ESTABLISHED 1917
NEW YORK WOODFINISHERS' Supply Co.
109 IMLAY STREET BROOKLYN, N.Y.

To cut the time below one hour, or to drop the temperature below what is recommended here invites the danger of shrinkage after rubbing. A suitable intermediate time would be four hours at 120° to 125° F. These recommendations are within safe limits. If for any reason you must reduce the time or temperature, you had better make careful shrinkage tests with your materials because some lacquers have more tendency to shrink than others.

The time and temperature recommedations given here are satisfactory only when suitable air movement is provided. This involves complete recirculation of the air in your drying room at least once every two minutes. With each complete recirculation, a portion of the "used" air must be removed and replaced with fresh air. This is necessary in order to remove solvent vapors.

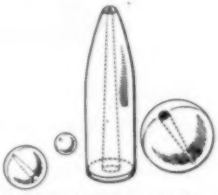
The replacement (fresh) air should be as little as practical in order to keep heat losses low. The amount may range from 10% to 20%. In other words, with each complete recirculation of air, at least 10% of the "used" air should be exhausted and replaced with fresh clean air.

When providing these conditions it is important that the temperature be uniform throughout the drying room. This requires that air circulation must be complete, with no dead spots where the solvent-laden air will be trapped. Also, the air circulation must be rapid enough to prevent stratification; that is, the temperature near the ceiling of the room should be only a few degrees higher than at floor level. Otherwise the finish on furniture placed at the lower level of the room will not dry satisfactorily.

Really the safest way to equip your drying room, to make it efficient, is to present your problem to a competent heating engineer who will specify and locate the equipment to do the job effectively and economically. It may cost more to do it this way, but the expense will be well repaid in satisfactory, trouble-free operation over a long period of time.—R. H. WAMPLER.

Coating Small Metal Fishing Lures

In the manufacture of finishing lures I am having difficulty in holding the units for dipping. At the present time I am using round toothpicks, but this is not satisfactory. The smallest of the three size balls (as shown in the drawing) falls off the toothpick, and the larger ones



The metal items to be coated are a little smaller than the size shown here.

become filled with lacquer in the tapered hole, preventing the easy insertion of a length of .020 stainless steel wire.

Can you help me with this problem, as well as the second one which is like unto the first, except that it is of a different shape, meaning the one is conical shaped?

At the present time I use a 13-in. piece of 1x1-in. wood with about 30 toothpicks pushed into drilled holes. The dipping pan is 15x3-in. high by 1-in. wide. Am planning to use a piece of wood about 15-in. square and a correspondingly larger pan. Can you help me?—O. E.

I am wondering why it is necessary to dip finish any of these items. From your letter I assume that these small metal items are finished separately

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We hope that by taking this rational step to reduce finishing costs we are making a contribution to the easement of our customers' painfully high production costs.

As of this date we undertake to furnish the finest in short-bake *Ablonite Synthetics* at worthwhile savings.

Companies within 150 miles are invited to make inquiry.

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Finishes Incorporated
EXCELLENT SYNTHETIC and WOOD FINISHES
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from the fish lures, that is to say, these pieces are not a part of the lure at least until they are finished.

If this is the case, I would suggest that each size of lead ball, as well as the steel cones, be strung on the .020-in. wire you mention, cut to lengths of about 10 to 12-in., and twisted on both ends to prevent the pieces from sliding off. Then several dozen loaded wires, all fastened together at one end could be placed in the work basket of a dip-whirl machine similar to those used in finishing ornamental chains in the jewelry trade.

After the dipping operation (inside the machine) the material pan is lowered to operating position, and the basket with the pieces in it are whirled clockwise at about 900-rpm. for five to eight seconds; then counter-clockwise for the same period. This whirling action removes all excess material, and it is a very fast operation. For the smallest size of lead balls, it may be necessary to place these in a cloth bag to prevent them from being thrown out of the work basket through the wire mesh during the whirling operation. They may be dipped in the thin cloth bag.

If you think well of this suggestion, it might be well to string several wires of balls and cones and send them to the manufacturer of a dip-whirling machine and ask the firm to finish the pieces in the material you use. Then you could determine whether or not it is satisfactory.—P.C.B.

If you are going to coat these items by dipping, I would replace the toothpick holders with holders made of spring wire. This should be of a gauge that will just slide freely through the holes in the parts. A little experimenting will determine the proper lengths to cut the wire to accommodate the various parts, allowing about ¾-in. which is bent a right angle at one end. This bent part is stapled or tacked to the dipping block, using double-pointed tacks (small staples).

Before mounting the holders on the block, make a very slight bend in the opposite end where it will bind when the lure part is placed on. It may be advisable to have the end of the wire flush with the lower opening when dipping. On the other hand, allowing a bit of wire to project from the hole may facilitate drainage.

The snug fit of the wire should keep any appreciable amount of lacquer from entering the holes, especially if the viscosity is high enough. If any lacquer does enter the hole it would probably remain soft long enough after the outside dries to make removal of the parts easy. I suggest making enough dipping jigs so that they can be soaked in washing thinner between dips, in order to keep the wires clean.

You mentioned tapered holes, which I presume are to give the lures a wobble action. If this is the case, and if too much lacquer enters the holes, the same jig may be used, inserting the wire in the small end, but extending it only half way through the part. The larger end of the hole will have to be temporarily plugged to keep out any lacquer.—GEORGE CONRAD.

John H. Cioe Joins V. J. Dolan & Co. as Service Technician

V. J. Dolan & Co., manufacturer of industrial finishes, Chicago, Ill., has taken another step to provide technically trained service men to assist its customers in solving their finishing problems. The company has acquired the services of John H. Cioe who received his early technical training at the Royal Technical School in Rome, Italy, and for several years worked in nationally known woodworking plants in the United States.

Mr. Cioe is exceptionally well qualified as a "trouble shooter" and is capable of matching colors to produce any desired finish. Although Johnny will be located in Chicago, his services will be available to the trade in adjoining states and he will serve as assistant to Mr. Olmetti, who is in charge of all service work.

MAR-PROOF LACQUER

SCHAEFER'S Mar-Proof Lacquer is a performance-proven finish that cannot be easily marred or scratched.

It's tough—tougher than the ordinary lacquers; meets the most critical requirements of current production.

Made in either clear gloss rubbing or satin finish, it produces a splendid transparent coating of full depth on maple, walnut, gum, mahogany and other cabinet woods.

Economical; gives plenty of coverage and dries quickly. Our Mar-Proof Lacquer Sealer is recommended with it for a first-coater.

Working samples furnished without obligation. Write for them!

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SCRATCH-PROOF

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STANDS LOTS OF ABUSE

Mobile Infra-Red Drying Unit for Cars

Auto-Bake, a new infra-red mobile paint-drying oven for automobile body paint jobs, is announced by American Brake Shoe Co.'s Kellogg Division. Seven features of the oven help dry synthetic enamels for automobile dealers and body repair shops at production line speed. Auto-Bake can be used for drying either lacquers or enamels but is intended primarily for use on synthetic enamels which are very slow in air drying.

Travels slowly and quietly over freshly painted automobile to bake or dry the paint.

Designed to produce instant heat, Auto-Bake is of rigid light-weight construction and has push-button control, automatic stop and lamp shut-off, and a variable-speed drive. The new oven occupies a small amount of floor space, and requires a minimum of maintenance for its operation. It is shipped completely assembled.

Auto-Bake travels over the newly painted vehicle from end to end. It rolls smoothly on rubber-tired, roller-bearing wheels which prevent vibration and thus protect the lamps. For spot touch-up work on fenders, hood, top and rear deck, individual baking zones controlled by six selective switches can be operated in any desired combination.

The frame of the new Auto-Bake oven is of rigid welded structural steel. Aluminum lamp channels with removable covers contain the flush porcelain receptacles and oven wiring. Inner reflector lining and easily removable outer panels are made of burnished aluminum.

The oven contains 120 internal reflector infra-red heat lamps and is wired for 220-volt, 3-phase, 60-cycle operation. Other voltages can be quoted on request. The motor is controlled by forward, reverse and stop push-button stations. Electrical limit switches at each end of the oven automatically stop the unit and disconnect the infra-red heat lamps at the end of a predetermined adjustable length of travel.

New Synthetic Enamel Has Remarkable Durability

A new synthetic enamel finish which performs equally as well as porcelain for many types of uses has recently been developed and made available by the Sherwin-Williams Co., Cleveland, Ohio.

The new finish, called "Superclad", was developed by S-W paint engi-

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that make the most of available raw materials to give you greatest durability, together with attractive appearance and economy.

• FOR APPLICATION BY ALL METHODS

JAMES B. DAY & CO., CHICAGO

neers to help solve a finishing problem which resulted from the shortage of enameling steel. The company reports that the coating already has been pressed into service for finishing aluminum washing machine tubs which one large manufacturer is using as a replacement for the standard porcelain tubs. The success with Superclad thus far indicates a broad use for this type of finish, not only in the washing machine field but also on other types of appliances such as mixers and refrigerators (inner liners, evaporator doors, etc.).

The finish is particularly outstanding in its resistance to alkalis and acids. Laboratory tests using a 10% alkali solution in one instance and a 10% solution of sulfuric acid in another case showed that Superclad was in good condition even after 18 months exposure.

The finish has also withstood 5000 hours of humidity test without indication of breakdown and has endured 2000 hours of exposure to salt spray without failure. Abrasion resistance of Superclad is only slightly lower than that of porcelain.

The coating lends itself to baking with either infra-red or convection type oven equipment.

Pre-Cut Adhesive Masks for Spray Jobs

Substantial savings in man-hours are possible through the use of pre-cut adhesive masks in spray painting, sandblasting and tumbling operations on metal, glass, plastic, wood and other materials, it is reported by Wiggins Mfg. Division, of Norwood, Mass. Wiggins produces such masks to order in any form desired, and in a variety of materials to conform to the requirements of particular jobs.

The company began manufacturing wing-masks for aircraft a few years ago, and reduced the time required to put license numbers on an airplane from eight hours to about 50 minutes. Since then, many industrial applications have been developed.

The masks are like ordinary masking tape, except that they are die-cut to any desired shape and size, and furnished on strips of liner from which they are peeled as needed. Thus all the work of hand-cutting masks to size is eliminated.

The company also has automatic equipment of its own design for combining adhesive tapes with other materials to make tabs, markers, etc. Colored cellulose tapes are sometimes used in place of paper.

Fountain Flow Touch-Up Brush

A Flo-Master touch-up brush, with stains suitable to use in it, is a new and useful tool for finishers and refinishers. The Flo-Master looks like a fountain pen except that instead of a metal writing point it has a broad nib that looks like compressed felt. Nibs of different shapes and sizes are interchangeable. The nib becomes saturated with stain from the

Stain touch-up with Flo-Master brush.

FASTER
FINISHING
AT LESS COST
PUMP AND SPRAY
FROM THE ORIGINAL CONTAINERS
1. Air-operated *Versatal* Pumps dispense materials directly from original drums . . . serve up to 6 spray heads.
2. Hydraulic pressures deliver materials through as much as 1000 feet of hose.
3. *Versatal* eliminates "time-out" for material handling and transferring . . . increases output per man hour.
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ALEMITE
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fountain, through a valve, and is ideal for applying a controlled film of matching liquid stain on any small area or part of a surface that needs it, in new or repair finishing and touching up. Nibs are easily and quickly cleaned or changed whenever this is desirable.

These fountain Flo-Master touch-up brushes, and stains suitable for use in them, are supplied by Hudson Supply Co., Box 21, Hudson, N. C.

Clear Semi-Gloss Lacquer for Wood Finishing

Features of the C-7046-L Clear Semi-Gloss Wood Lacquer, recently brought out by Allied Finishing Specialties Co., 2611 W. Grand Ave., Chicago 12, Ill., include the following: High solids (25% plus); will stand reduction of about 15% to 20% for for spraying; doesn't settle in the container; is light in color.

The coating produced by this lacquer is highly resistant to blushing, cold checking and spilled liquor. It has a natural satin finish or rubbed effect, but can be easily rubbed if desired.

"Stripit" Paint Remover Has New Features

Magnus Chemical Co., Inc., Dept. IF, Garwood, N. J., announces the development of Magnus "Stripit," a greatly improved material for removing paint and such other coatings as lacquer, primer, synthetic enamel, baked and air-dried varnish, and baked automotive finish.

Under normal conditions "Stripit" will remove at least three coats of paint in one application. The first coat begins to pucker in one to five minutes. Ordinarily the action of "Stripit" is so thorough that a cutting stream of water directed on the surface will remove all the loosened paint in a few minutes.

"Stripit" is always ready to use. It's non-inflammable, and does not require the use of inflammable solvents. Surfaces stripped are ready for re-finishing. No neutralizing agent is required. It is safe to use on any metal or wood. It will not bleach or raise the grain of wood.

"Stripit" is a heavy-bodied liquid which clings to vertical or inverted surfaces. It is slow to evaporate and can be left on surfaces for long periods of time without becoming set or hard to rinse off.

Alkali-Resistant White Enamel Offered by Hilo

A new "high" has been set in an alkali-resistant coating, according to Hilo Varnish Corp., 42 Stewart Ave., Brooklyn 6, N.Y. One hundred hours in standard test detergent soap solution at 160° to 165° F. shows no film break-down or loss of gloss.

Hilo No. 2463 Alkali-Resistant White Enamel is well suited for use on washing machines, kitchen equipment, bathroom fixtures and many other products subject to contact with soap and detergents used in washing. It may be used on both metal and wood. It requires baking at 300° F. for 30 minutes or 250° F. for one hour.

Portable Dust Collector

A new self-contained portable dust collector for collecting dust from small wheel grinding and sanding, and lint from buffing and polishing operations is added to the line of industrial dust collectors made by Age-Detroit Co., 338 Main at Washington St., Ann Arbor, Mich.

Popular Request...

The Special Offer, described on the left, was such a popular hit that we're repeating it for finishers who know VALUE when they see it. The heat-controlled Deluxe "Electro-Knife" gives you a better burning-in job—minimizes danger of scorching finish or overheating STIX. Eliminates nuisance of heating and reheating spatula. No open flame—no fire risks.

Air-cooled cork handle for comfort. Perfect balance prevents fatigue—makes work easier. Spoon-shaped copper blade makes neater, smoother mends with less adhesion of the STIX to the blade.

LOOK AT THESE FEATURES!—New type refractory core construction—Porcelain encased heating element of nickel-chromium resistance wire—Handy take-apart cord connector—On-off switch—Gripper clamp for hanging up—Solid copper spoon-type blade (interchangeable Flat Angle Blade, extra $2.75)—110-120 volt AC-DC.

Take advantage of this Special Offer Today!

Seven Famous Brands of Burning-In STIX

Finishine's famous Burning-In STIX are color toned to blend perfectly with the material being repaired. Mold easily and set in a permanent, hard-finish—no bubbles, color runs or smears. 350 standard colors and formulas. Special colors matched perfectly at slight extra cost.

1. LACSTIX made of the finest materials. Will not lift, shrink or swell in or under lacquer.
2. SHELSTIX made of choice shellac gums and resins. To repair standard finishes.
3. PORCELSTIX a unique combination of waterproof, heat-proof resins. Repairs porcelain, china, marble or tile.
4. VARSTIX made for varnish finishes. Will not lift or shrink in or under varnish.
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6. ENAMELSTIX to repair enamel-finished wood or metal. For use in or under any type of enamel.
7. CEMENTSTIX made of more pure gums and colors than ordinary wood cement.

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Layers of inflammable paint come off more quickly if you have applied Wyandotte Spray Booth Coating first. Only a thin coating makes cleaning easier, speedier, more economical.

And you can reduce your floor-cleaning costs with Wyandotte F-100*. Even heavy soil stands no chance against this remarkable compound.

For more information about these Wyandotte Products, write the Wyandotte Chemicals Corporation, Wyandotte, Michigan.

***Registered trade-mark**

New Spray Gun

The Black Mfg. Co., 1425 W. Baltimore St., Baltimore, Md., makers of "Hollow Air" paint spray equipment, announces the development of a complete new line of lightweight spray equipment specifically designed for use by painters operating with a limited air supply.

Light-weight, general-purpose spray gun.

First item to be released in this new series of Black Arrow products is the Model B-6900 Spray Gun. This gun, by a simple change of head setups, can be made to operate with equal efficiency on compressors ranging from 1/3 to 1 1/2-hp. It will handle all types of material.

New Paint Stripper Announced by Oakite

A new, cold solvent material, Oakite Composition No. 15, designed to permit fast thorough removal of paint and similar finishes from metal surfaces, is announced by Oakite Products, Inc., 132F Thames St., New York 6, N. Y.

This preparation is excellent for removing baking japans, wrinkle finishes, nitrocellulose lacquers, and synthetics such as alkyds, phenolics

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USE
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TACK RAG
Industrial size 18 x 36
WILL NOT SMOKE NOR
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IN A WARM PLACE
Always Soft and Tacky

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Protects all non-porous
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Mac's
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BLEACH
Will Bleach All Kinds of Wood
MAC'S FAMOUS FASHION BLEACH is now available for bleaching all kinds of wood including mahogany, the most difficult wood to bleach. It dries overnight to a desired bleached effect ready for sanding and for the regular finishing schedule. It can be applied by spray using a glass container.
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ureas, vinyls, etc., from such metals as steel, galvanized iron, die castings, aluminum, copper and brass, with no attack on the metal.

Designed for use at room temperature, Oakite Composition No. 15 may be applied by tank immersion method or by swabbing or brushing. This is followed by hot pressure-rinse to remove loosened paint particles. An outstanding use for this material is production stripping of rejects.

New Synthetic Enamels for Dip Coating

The development of an improved line of synthetic enamels for hand and mechanical dipping operations, for such items as steel filing cabinets, carpet sweeper bodies, etc. is announced by Saul L. Cantor of the United Lacquer Mfg. Corp., Linden, New Jersey.

This material removes the vexing problems of a float, sag, and silking. It makes possible a beautiful even distribution and thickness of film on the entire object dipped. When desired a high gloss can be obtained. This finish can be made in any gloss or sheen required, in either an air-dry or baking synthetic base. It affords an excellent wide range in baking temperatures.

Prepares Metal Surface for Superior Paint Bond

Globrite Number 44 and 45, for metal conditioning and surface preparation, are featured in a new 2-color folder just released by The Globe Chemical Co., Dept. IF, Cincinnati 17, Ohio.

Schematic illustrations show clearly the application of Globrite 44 and Globrite 45, and complete instructions explain their use. Globrite 44 is an effective metal cleaner, pre-paint conditioner and rust-resisting agent for large fabricated pieces. Globrite 45 is an excellent rust-resisting and pre-paint conditioning agent for production line use.

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THE GRAND RAPIDS PANEL COMPANY
Manufacturers of Wood Graining Equipment
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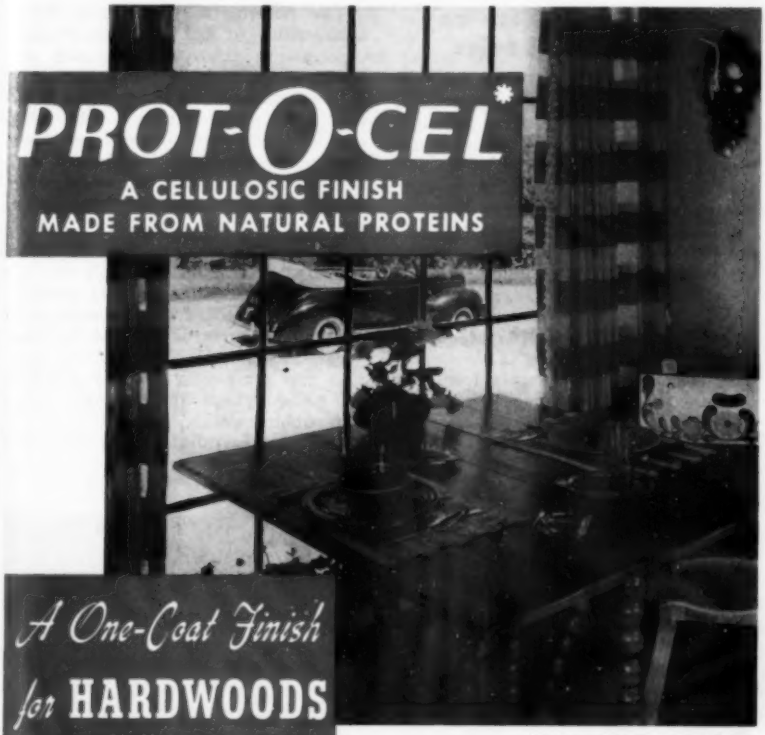

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ARMTONE

SYNTHETICS • LACQUERS • SEALERS • PRIMERS • ENAMELS

Baking the Finish on Automobile Bodies

THE FORD MOTOR CO. has recently made a major improvement in its automotive finishing through the installation of new "Short Cycle Heating" equipment in two of its new Lincoln - Mercury assembly plants. Nine ovens of the new type, combining both controlled convection and infra-red heating, have been installed for baking both prime and first color coat finishes.

The ovens are being used on production lines for bodies, fenders, hoods, wheels, and other sheet metal parts. The heat capacity ranges from 100 to 700-k.w. each and the oven lengths vary from 20 to 170-ft. A total of 3750-k.w. of this new type of heating has been installed.

The heating schedule calls for a temperature of 325° F., to be attained in the first three minutes and this temperature is held for a period of 6 to 12 minutes on the various products. The ovens handle a total heating load of over 60 tons per hour. The power supply is interlocked with the conveyor system to avoid overbaking in the event of interruption to the production lines.

A positive air pressure is maintained in the ovens through the use of air recirculation and air curtains at the work entrance and exit openings. Exit curtains provide for heat recouperation at the end of the cycle and the remaining heat is removed by water sprays as the work enters the rubbing decks.

The new installation has effected a saving in floor space.

Interior of new oven wherein controlled convection and infra-red heating are combined for baking the color coats on automobile bodies. Photo, courtesy of Trumbull Electric Mfg. Co.

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NON-INFLAMMABLE
« *wax free* **REMOVER** »

for paint, varnish, lacquer, baked enamel, adhesives
EASY TO APPLY—NO AFTER CLEANING

I. C. D. FORMULA 9 is the standard of safety and quality . . can be sprayed or brushed . . doesn't raise grain nor discolor . . quickly removes all kinds of finishes and coatings from any surface or material . . costs less to use . . saves time, labor and material.

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347 MADISON AVE. NEW YORK 17, N. Y.

Anderson Represents Sand-O-Flex in Illinois and Wisconsin

Merit Products, Inc., Los Angeles, makers of Sand-O-Flex sanding wheels and abrasive cartridges, announces the appointment of F. W. "Red" Anderson, 800 North Clark St., Chicago, Ill., as sole

F. W. Anderson will have offices in Chicago, Ill., and Racine, Wisc.

sales representatives for the Illinois and Wisconsin territory. With offices in Chicago and Racine, "Red" Anderson plans to install practical facilities for demonstrating the Sand-O-Flex line of wood and metal finishing tools. Sand-O-Flex brush-backed sanders are especially recommended for finishing contoured and irregular shapes.

Motion Picture Notice

A new technicolor sound 16-mm. film is announced by Ransburg Electro-Coating Corp., 1234 Barth Ave., Indianapolis, Ind., covering their electrostatic detearing and electrostatic spray finishing processes.

This film is available for showings by manufacturers, technical societies, educational groups, etc., at no charge. It is 650-ft. long—about 17 minutes running time.

A special sequence is devoted to showing how each process works, particularly the "wrap-around" feature of electrostatic spray that is responsible for the characteristic paint savings.

The major part of the film covers a series of takes of representative industrial installations, showing actual production line painting.

Metal Cleaning Book Free

Emphasizing the fact that every metal product cleaning problem is different, a new 28-page, 2-color book just published by The Alvey-Ferguson Co., Dept. IF, Disney St., Cincinnati 9, Ohio, takes the reader through the process of what to look for when selecting a washing machine.

Profusely illustrated to give top management, as well as production and plant engineers, the complete story on the factors to be considered in making a proper choice of equipment for thoroughly cleaning metal parts and products, this new book carries the reader quickly through all construction features. The skeleton, pump-screening facilities, heating systems, skim box drain and overflow, inspection and clean-out doors, dryers and various types of conveyors are detailed for quick comparison. The "Super Spray" washing action that effects savings in time and materials is clearly explained and illustrated.

A section of the book is devoted to completely co-ordinated conveyorized systems engineered by The Alvey-Ferguson Co. to solve specific problems in leading industries. Flow charts show clearly how cleaning and conveying equipment can be integrated into a line production system.

"Sanco" Line of Industrial and Automotive Finishes

The Monroe Sander Corp., 10-18 46th Ave., Long Island City 1, N. Y., manufacturers of industrial finishes, announces that it now distributes nationally complete lines of automotive, industrial and trade sales paints, varnishes, lacquers and enamels. These new products bear the firm's trade name, "Sanco."

The automotive line features a full range of lacquers for automobile paint shops, as well as synthetic enamels and primer surfaces for fleet owners and truck maintenance use.

The industrial line consists of clear and pigmented lacquers for all types of wood and metal products. Also available are sealers, retarders and thinners.

Preparation of Metal for Painting

A 4-page bulletin on the above subject contains information of interest and value to all metal finishers. A copy of the bulletin can be obtained free by writing to American Chemical Paint Co., Ambler, Penna.

Infra-Red Heating Folder by Fostoria

A new 6-page, 2-color illustrated folder, published by The Fostoria Pressed Steel Corp., Fostoria, Ohio, contains practical information and suggestions on the use of Evenray infra-red systems for curing or baking paint coatings economically and efficiently. The how, why, where and when of using infra-red heating in industry, are answered.

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STERLING

Complete Finishing Systems

Primers... Thinners
Clear and Synthetic Enamels
Ready-mixed Metallic Lacquers

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DRUM TUMBLING MACHINE

for Efficient Mixing of Materials in Suppliers' Drums

- No solvent loss
- No time loss
- Material ready when needed
- No fire hazard
- Nothing to clean

- Supplied in sizes from 5 to 55 gallons; any load, any speed.

Send For Literature!

THE VOL-U-METER CO., P. O. Box 54G, Buffalo 16, N.Y.

Industrial FINISHING Editorial

Next Month Begins I. F.'s 25th Year

November 1948 issue will be volume XXV, No. 1, marking the beginning of the 25th year of publication for INDUSTRIAL FINISHING Magazine. This magazine was started in 1924 in Indianapolis, Ind., as an independent publication to present articles of interest and value to those industries that use paints, varnishes, lacquers, enamels, etc., as protective and decorative coatings on products they manufacture. It was the first exclusive finishing magazine in the field.

Many changes have occurred in everything connected with finishing and painting of products made in factories during the past 25 years. A few highlights on these changes and the steps of progress made in materials, equipment, accessories and methods, as used in finishing and painting departments in industry, will be reviewed briefly in November issue. This issue will also have a special decorative front cover commemorating the beginning of INDUSTRIAL FINISHING's Silver Anniversary year.

Attention, Executives of All Factories

Editor's Note: The following paragraphs are out of a letter from one of our California correspondents—an observing individual of great vitality.

. . . If there is action toward rearmament, it will mean the loss of a lot of trained employees from manufacturers of peacetime products because man power will go into armament production due to the added incentives in that work.

I still advise the following:

1) Stockpiling of key materials that were scarce during the last war.

2) Production of fewer styles, which would cut overhead and permit expansion of production.

3) The use of conveying or mechanical finishing systems on a 24-hour basis for industries having large amounts of unfinished orders.

4) Adding qualified female help in skeleton type organizations; this would permit easy smooth expansion of these organizations into a valuable production asset.

5) Foremen should be impressed to use good sense and judgment in the handling of female labor.

Increased railroad FOB rates make it more important for Eastern plants to expand westward to head off powerful potential competition from new and expanding western plants. Western owned plants are steadily expanding and most of this expansion will be paid for by eastern manufacturers who are going to lose sales and ground, because they haven't put any "eyes" out west.

When things go too good in any industry, the tendency is to ease off and forget the rules of business. Business does not continue nor does it expand in a vacuum of inactivity. No man or group of men have continued to be successful in solidifying their business enterprise unless they have been constantly on the alert to eat, feel and smell trends and take action accordingly. Let us hope that because some of our men in industry have been showered with success for their

hard work and tireless efforts, they do not drop by the side of the road of inertia. Barnum said, "There is one born every minute". There is always a keen eyed competitor, also born every minute; he will if you don't.—N. A.

Smooth Surfaces for Smooth Finishes

★ A few years ago a customer was using our pigment wiping stain, lacquer sealer, gloss lacquer, and flat lacquer (one coat of each) in finishing novelty furniture. The woods used were red and white gum, poplar, and tupelo. He complained that his finish lacked fullness and was very rough. At our request, he sent us samples of his finished work, as well as an unfinished piece, a coffee table.

Examination of the finished work showed that his finish was indeed quite rough. Upon closely examining the piece "in the white" which was ready to finish, we found his trouble at once. The entire piece was covered with coarse sandpaper scratches; and on the plywood, planer marks on the corewood showed through the veneer.

In order to demonstrate our point we sanded down half the coffee table and left the remaining half like it was. Then we finished the piece with his materials, using his own schedule. The contrast between the two halves was startling. The half we had not touched was as rough and "hungry looking" as his own work. The other half was smooth and full.

Needless to say, the manufacturer

★. *Guest Editorial . . . Many readers can write an excellent editorial—two or three paragraphs that present a timely suggestion or valuable idea which will stimulate thought on a live subject. The Editor welcomes guest editorials, paying for those published.*

The **DUST-ALL**
TACK RAG
Collects Dust and Dirt Too!

IT picks up the dust, dirt and specks that spoil paint jobs. It assures a pride-arousing finish job and a profitable one. Get them from your dealer or write us.

The Dust-All Tack Rag comes in the characteristic Red Checkered Bag.

HARDING
MANUFACTURING CO.
10606 Gratiot Ave., Detroit 13, Mich.

of novelty furniture saw the point at once. After revising his sanding procedure on the wood he had no trouble in getting a good finishing job.

Lack of proper sanding causes far more trouble in finishing than is generally recognized. Proper sanding makes it possible to get a good finishing job with a minimum of operations. After cutting down the wood surfaces with drum and belt sanders, using coarse sandpaper such as No. 2/0, the wood should always be made smooth with finer grades such as No. 4/0 and finished with No. 6/0. After assembly, the piece should be gone over by hand or with a portable sander, using No. 6/0 abrasive paper.

Coarse sanding scratches are brought out by the stain as ugly straight lines which spoil the appearance, especially if they extend across the grain. Proper sanding of the wood reduces the amount of materials needed for finishing, as well as insuring a better looking job. One finisher has calculated that proper sanding reduces the finishing material requirements as much as 20%, and the labor requirements up to about 35%. —ROLLIN H. WAMPLER.

Install NALCO *Infra-Red Lamps in Your Drying Units*

Time tested—job tried, Nalco infra-red lamps have proven highly efficient and long-lasting for all types of drying, baking or heating installations . . self reflecting or clear glass type.

Send for "Drying Problems Made Easy"

North American Elec. Lamp. Co.
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Goodell, Mgr. of Ind. Heating Sales for Trumbull Electric

Paul H. Goodell has been appointed Manager of Industrial Heating Sales of the Trumbull Electric Mfg. Co.

Mr. Goodell is Chairman of the Radiant Heating Committee of the American Institute of Electrical Engineers. He has been responsible for many large industrial heating installations made during the past ten years, and has been well known as a pioneer in electric infra-red heating.

Paul H. Goodell
Manager of Industrial Heating Sales for Trumbull Electric Manufacturing Co.

Mr. Goodell is a native of Cincinnati, Ohio, where he attended the University of Cincinnati. He came with Trumbull in 1943 to develop the company's line of "Raymersion" heating equipment. Mr. Goodell now makes his headquarters at Plainville, Conn.

the SPRA-CON COMPANY

"THE FINISHING TOUCH"

Engineers and manufacturers of conveyors, ovens, washers, and equipment for complete paint finishing systems . . . .

1402 No. Western Avenue, Chicago 22, Illinois

Salesmanship Starts With the Finish

★ Recently I saw two identical pieces of equipment sent out by a factory for use as samples. They were excellent in design and construction, but the finish, instead of bringing out the basic qualities, was actually so bad that I believe prospective customers will hesitate or even refuse to buy the products. I certainly do not envy the salesmen who must try to get orders for those products, while the samples they have are so poorly finished.

At first one might suppose that the poor finishing job just happened to be on a sample which was rushed from the factory; but the most glaring fault was visible in both samples, thus indicating that a basic problem was still to be solved in connection with the finishing job.

Long before the samples were finished, there was lack of salesmanship back along the line some where. The foreman may have failed to sell his workers on quality workmanship. Possibly the head of the finishing department hadn't sold top management on the merits of certain materials and modern equipment to keep up with the industrial parade; or perhaps the commercial enameling firm that did the finishing job had been selected on the basis of its cheap prices rather than its high quality of workmanship.

Considerable salesmanship must go into moving mass production. All of it should not be held back for the point of contact selling, when buyer and salesman thresh out the details of placing actual orders. Think what a problem must be met by salesmen offering the poorly finished samples just mentioned. They will have to not only combat normal sales resistance but they must also get around objections to the appearance of the finish — something that could have

MASKING PROBLEM?

KWIK-MASKS *STAY ON*

DURING:

- **Spray Painting**
- **Sandblasting**
- **Tumbling**

— Because the finest pressure-sensitive adhesive is used.

More and more manufacturers are turning over their masking problems to Wiggins. We specialize in making to order in any shape and size, no matter how intricate, self-adhesive masks for a wide variety of industrial applications.

We also furnish for a variety of uses paper or colored cellulose combined with other materials and die-cut to any shape.

An inquiry will bring details and samples promptly. Please mention intended use.

Wiggins

MANUFACTURING DIVISION

Dept. B, Norwood, Mass.

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Designers Manufacturers of
INFRA-RED OVENS · APPLIANCES · SECTIONAL UNITS · MACHINES AND CONVEYORS
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SALES OFFICES: ATLANTA, BUFFALO, CHICAGO, CLEVELAND, DETROIT, HOUSTON, INDIANAPOLIS, LOS ANGELES, MILWAUKEE, NEW YORK, SAN FRANCISCO
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CLEVELAND 4 OHIO
The Miskella Standardized Insulated line now includes: Vibra-Veyor, Duplex-Veyor, Burn-in-Kit, Bench-Kit, Test-Kit, Barrel-Kit, "Tub" Oven, Pull-Thru Oven, Elliptical Oven, Rack-Tub, Hy-Heat Units, Super-Heat Units, Low-Heat Units, Porta-Veyor, Chain-Veyor, Belt-Veyor, Coil-Veyor, Heat-O-Lier and Attic Oven.

FOR ALL FINE FINISHES
TAC-ALL TACK RAGS
Packed bulk or individually.
Prices and samples on request.
GEO. W. RENNER CO.
2309 Lillie St., Ft. Wayne 5, Ind.

been corrected or eliminated in the finishing department. It's a difficult task for salesmen to do that today, and in the more competitive markets of tomorrow it may be impossible.

If you believe that first impressions count, then you should know—yes, everyone should know—that an attractive finish always puts a product out in front and in favorable light. It reduces sales resistance even before the salesman has said anything at all. It leaves his dynamic power of salesmanship fresh and ready for meeting other matters such as performance, price, delivery, etc.

If you fail to sell the workers in your department or your company's management on factors which would improve the finished product, then you throw too much responsibility on the salesman. The time is already here when he cannot carry the extra load and still turn in the volume necessary for quantity production in your plant. Smooth the way for your salesmen and you smooth your road to profits.—GEORGE M. DODSON.

Columbus Varnish Changed to Hanna Industrial Finishes Co.

The name of The Columbus Varnish Co. (industrial finishes), Columbus, Ohio, has been changd to The Hanna Industrial Finishes Co.

Since 1929, The Columbus Varnish Co. has been a wholly owned subsidiary of The Hanna Paint Mfg. Co. This change in name has been contemplated for several years, and does not alter the capital structure of the company. The Hanna Industrial Finishes Co. is still a separate corporation and a wholly owned subsidiary of The Hanna Paint Mfg. Co.

Free Maintenance Book on Paint Spray Booths

The DuBois Company, Cincinnati 3, Ohio, has prepared a valuable portfolio on the subject of paint-spray booth maintenance. This presentation includes vital and important facts about keeping wet spray booths operating at maximum efficiency, plus interesting articles entitled "Operating Suggestions for Water Curtain Spray Booths," "Conditioning the Water for Wet Spray Booths," and "To Operate and Clean Wet Spray Booths."

Also included in the folio is a report prepared for a large automobile manufacturer, giving the correct operating procedure for spray booths. This procedure is useful to anyone who operates a spray booth, because it will serve as a guide to stimulate his own thinking on the subject.

The literature includes answers to such questions as: Why chemical compounds are used in the water of wet spray booths, how much to use, how often to drain out all water and replace it with renewed charge, how to know if the treated water is right.

Be Fresh . . . Stay Fresh!

on

PAINT SPRAY JOBS

wear a DUPOR Chemical Cartridge Respirator No. 10

Ideal for paint, lacquer, enamel vapors, fumes, gases, etc. Face mask gives air-tight fit, controlled breathing, panorama vision with no blind spots. Cartridges are of colored plastic for easy identification! When ordering, specify the WHITE for Code A; BLACK, Code B; YELLOW, Code AB.

Sample sent
$4.50 pp

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COVER'S
GAS-TIGHT
FOG-PROOF
GOGGLES
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RONCI SPEEDIP WHIRL ENAMELER

Made in Two Sizes, R-100 and R-200 Capacity 312-cu.in. and 1206-cu.in.

IDEAL FOR LACQUERING AND ENAMELING SMALL PARTS UP TO 7-IN. IN LENGTH

CUTS COSTS, SAVES UP TO 80% OF MATERIAL

Carries up to 75-lbs. per load, and up to 30 loads per hour can be coated with lacquer or enamel in these machines.

All operations are within the machine. Dipping tank is raised, submerging the parts in the basket, and then lowered and the parts whirled, throwing off excess material. No additional outside tanks required; no cleaning necessary when changing colors; no loss of material.

PROMPT DELIVERIES

Write for further information and submit samples to be coated.

RONCI MACHINE COMPANY

A Division of F. Ronci Co., Inc.

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WOOD BLEACH

as carefully as you do other finishing materials (not just any No. 1 and No. 2 bleach.) You rightly buy from the maker who knows how.

Secure Your Results

Make PERFECT
BLANCHIT
bleached wood.

Use
BLANCHIT

THE ORIGINAL

The only patented wood bleach which has been improved.

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RESTORE PAINT IN 2 MINUTES

PER GALLON WITH
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5 GALLON
PAINT REJUVENATOR

Paints, lacquers and enamel products can be restored to their original consistency without opening the can. Units available to handle from ¼ pint to 50 gallon drums. Immediate delivery.

Originators of paint rejuvenating equipment---sixteen years—thousands of satisfied users.

Write for folder & prices

MIRACLE PAINT REJUVENATOR CO.
127 E. 9th Street St. Paul 1, Minn.

Random Comment on the Industrial Scene

(Continued from page 7)

what it is to be used for. It is made up largely of fluorine and chlorine and contains no hydrogen, which it is said is a point of chemical attack.

This plastic has good dimensional stability, a property long sought in the plastic field.

* * *

Inventions Wanted. The National Inventors Council lists a comprehensive number and variety of inventions wanted. It may be the 21st century before some of these gadgets come through. Most of them will benefit industry directly or indirectly. Two items on this list deserve immediate attention: Instruments for measuring humidity, and a light-weight expendable pallet for warehouse use.

A third device, not on the list might be added—an instrument which continuously measures and records the viscosity of liquids such as enamel, lacquer, etc. One of these devices installed in the pipe line of a central supply system, or just beyond the outfeed end of a pressure tank, would reveal and record a lot of valuable information.

* * *

Less Damaged Goods. Claims for lost or damaged express shipments continued their downward trend for the seventh straight month this year with a system-wide decrease of nearly 39% in July, as compared to the same month last year. Claim decreases ranged from 54½% to 14½%.

The continuous reduction claims was attributed largely to the concentrated attention being given to all phases of the claim problem on a system-wide basis by the Railway Express Co. Another factor has been the cooperation of the shipping public in better

packaging of merchandise for shipment. Company officials stated that employes have contributed to the downward trend through their participation in the self-inspection activities of the company, which aim at speedier and more careful handling.

* * *

"Dry" Plating Process. A process of metal plating by means of a gaseous medium has been successfully developed by The Commonwealth Engineering Co. of Dayton, Ohio.

Heat is the sole means of deposition in the Commonwealth gas plating process, which involves the thermal decomposition of metal carbonyls in an inert atmosphere of carbon dioxide.

Objects to be plated are radiant-heated in a plating chamber supplied by a metal carbonyl generator, in a closed system which recycles the plating gases for economy of operation.

An integral metal coating is quickly obtained at temperatures of approximately 400° F., and the "dry" process is applicable to any material which will withstand this temperature range.

* * *

Company News. Employees like to know all there is to be known about their company. This fact has been revealed repeatedly by surveys among the readers of employee publications and by the opinions of employee relations experts. Surveys show that more news about the company ranks first among the things employees like to see in their magaines and newspapers.

ALAKA Lacquers
QWIK-BAKE Synthetics
ALAKATONE Hammered Silver
SYNTHALAK Air-dried Synthetics
LACQUER & CHEMICAL CORPORATION
222 FORTIETH ST BROOKLYN 32 N Y

"Behrlon," New Name of Flock Made by Behr-Manning

Previously designated as "Stylon" Micro-Cut Fibers, Behr-Manning's precision cut flock products will hereafter be designated as "Behrlon" Micro-Cut Fibers.

Simultaneous with the new name change, which is now being registered, Behr-Manning announces improvements in its dyeing techniques and the addition of six new standard colors, all of which are shown on an attractive new color swatch card, available for immediate release to flock users.

To obtain a new card of colored flock samples, write Behr-Manning, Electro-Tex-tile Division, Troy, N. Y.

NATIONAL
Lacquer and Paint Co., Inc.
SERVING INDUSTRIAL AMERICA
MFRS. OF
WRINKLE AND GLOSS FINISH ENAMELS - LACQUERS
WRITE FOR INFORMATION — SAMPLES — QUOTATIONS
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A great name for Colors

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IDEAL TACK RAGS

FOR A PERFECT FINISH

Immediate Delivery

IDEAL CHEMICAL COMPANY

1689 Lee Road Cleveland 18, Ohio

Water Wash Compounds
Spray Booth Coatings
Peelable Plastic Coatings

If your present compounds are doing the work, DON'T confuse yourself and take chances of your Booths clogging, by switching to other compounds.

HOWEVER, if your compounds are NOT doing the work, try CRYSTAL COMPOUNDS, which are packaged in humidity proof steel and fiber containers because they are pure alkali blendings without unnecessary fillers being added. Just forward to us, a few ounces of your paint for tests and recommendations as to correct compounds to be used. No obligations.

CRYSTAL LABORATORIES, INC.

CRYSTAL LAKE, ILLINOIS

Manufacturers of Water Wash Compounds, Spray Booth Coatings and Peelable Plastic Coating for the Leading Manufacturers of Spray Equipment

Classified Advertising

Rate: $1.00 per line per insertion—minimum $5.00

POSITION WANTED

Superintendent of Finishing Room. Experienced and dependable man with 30 years' experience in metal and wood finishing. Thorough knowledge of finishing material, equipment and conveyor systems. Capable of producing fine finishes economically. Address IF-582, care of Industrial Finishing.

POSITION WANTED.

Young paint shop supervisor with 20 years' experience on all types of organic finishes. Cleaning, dip, spray, baking, graining. Capable of complete charge. Handle and train any number of employees. Go anywhere. Address IF-575, care Industrial Finishing.

INDUSTRIAL FINISHES; STRIPPABLE COATINGS

Well-established maker of specialized industrial finishes, baking enamels, interior and exterior maintenance paints, corrosion-resistant paints, and America's best-known line of strippable coatings seeks resident representatives. Exclusive, compact territories open with live leads and many satisfied customers. You must cover industrial and metal working plants and finishing departments. Straight commision. We have been selling direct, so do not hesitate to answer this ad. Address IF-577, care Industrial Finishing.

OCTOBER, 1948

OCT 25 1948

Industrial FINISHING

Published Monthly in the Interest of Product Cleaning and Painting by Practical Publications, Inc., 1142 N. Meridian Street, Indianapolis 4, Ind.

Advance

PAINT COMPANY

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Indianapolis Indiana

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IT'S A *Best Seller*

IT'S A WESTINGHOUSE
IT'S A SAGINAW CABINET
. . . WITH AN INTERCHEM FINISH

One of the sales leaders in the highly competitive radio-phonograph market is the Westinghouse One Eighty Six Console pictured above.

Contributing importantly to this sales success is the set's beautiful, Hepplewhite-inspired bowfront cabinet—a masterpiece of cabinet craftsmanship—built by the Saginaw Cabinet Co., Saginaw, Michigan.

The full beauty of the highly figured mahogany veneers used in the cabinet is developed with Interchem Hi-Speed S.F.C. Incorporated in this fast, economical stain-filler combination are permanent, penetrating stains and a new, chemical-resin vehicle which resists shrinking and graying. That's why the ultimate finish is distinguished for its rich, crystal-clear color and sharp definition of the pore.

For detailed information, write Interchemical Corporation, Finishes Division, 57 State St., Newark 1, New Jersey.

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IC is a trade-mark of Interchemical Corporation.

Fast action!
Metal unattacked!
enthone strippers
FOR ORGANIC FINISHES
ENTHONE
THE best stripper for your needs will be determined by Enthone Laboratories free-of-charge. Send samples for test.
ENTHONE INC. 442 ELM STREET, NEW HAVEN, CONNECTICUT

Number SEVEN of a Series

Continuous laboratory testing for uniformity and quality covers all elements of finishes. Shown here, the use of a 60-degree glossmeter determines the exact degree of gloss of a flat varnish. In this section of our laboratory these varnishes are blended and tested to meet specific requirements.

GRAND RAPIDS VARNISH CORPORATION
GRAND RAPIDS, MICHIGAN
Makers of the Famous Guardsman Finish

Carries Away Overspray . . .
IN A WHIRLING TORNADO OF WATER

PAINT-LADEN AIR IS "TORNADO" CLEANED. Operators, working in a Schmieg Centri-Merge Spray Booth, are adequately protected from fire and fumes. Overspray is carried on an air stream *horizontally* away from work into a curtain of water, pressure-fed through slots extending continuously full width of booth, that descends down the flood sheet. The mixture of fume and paint-laden air and water is then whirled under the flood sheet and hurled with tremendous impact against the impingement wall at back of booth. Down this impingement wall flows an additional sheet of water that floods the foreign matter, pounded out in the process, into the sludge tank below. Only CLEAN AIR passes through exhaust fan. Thus the danger of fire is suppressed both in front and behind the flood sheet. Because the ratio of water and air is far greater in Centri-Merge, paint and other gummy substances do not pile up on the hard-to-get-at walls of the chamber behind the flood sheet; therefore, cost of repeated cleanings is eliminated.

Consult Schmieg engineers regarding your problems of dust and fume control.

THE *best* AIR PURGE *is* CENTRI-MERGE

Schmieg INDUSTRIES INC.

Engineers & Manufacturers

312 PIQUETTE AVENUE • DETROIT 2, MICHIGAN

THE Lilly COMPANY
FINISHES
High Point, N. C.

For those new individual
light tones, USE . . . .

Du-Bar
WOOD BLEACH

Here is a powerful, one-application bleach that definitely removes all coloring matter from wood surfaces or it may be controlled to any degree of bleaching desired. DU-BAR BLEACH is lasting too —no yellowing with age. Can be sprayed or brushed.

Research, experience and manufacturing skill combine to make DU-BAR BLEACH one of the most successful bleaches on the market. Sold in two units—No. 1 and No. 2. Available in one gallon bottles or carboys. Also—WATER-WHITE LACQUERS! WATER-WHITE SEALERS! HAMONIZING FILLERS!

SAVE MONEY! You can save considerable money, besides insuring your source of supply, by ordering assorted Lacquers, Sealers, Thinners, Stains, Fillers, Synthetics, etc., in pool-car or truck-load lots. Write DOLAN for particulars!

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Unquestionable Quality

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CHICAGO 39, ILLINOIS

WABASH PRODUCTS COMPANY

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SIMAX

THE FINISH THAT LASTS

Industrial Finishes

Lacquers Enamels Sealers

Stains Varnishes Thinners

Synthetics, all types

NON-INFLAMMABLE **ELECTRO** NON-INJURIOUS

COLD STRIPPER

FASTEST *in Action*

LOWEST *in Price*

WRITE FOR TESTING SAMPLE OR ORDER

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Allied Finishing Specialties Co.

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A NEW AIR-DRY ENAMEL

LOW IN PRICE

TESTED and APPROVED for Outdoor Weathering

- HIGH GLOSS • GOOD FLOW
- EXCELLENT ADHESION
- SUPERIOR DURABILITY

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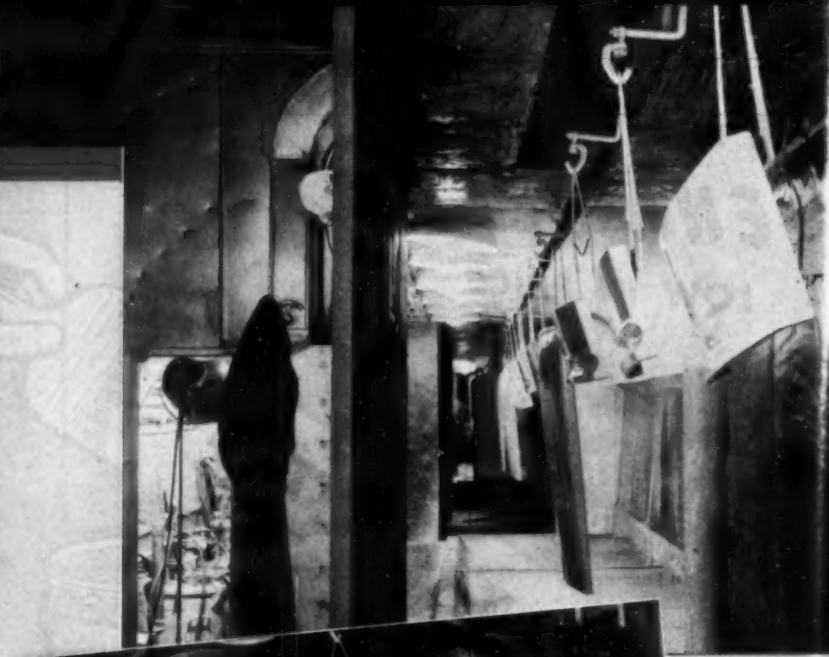

Above, and at the rig
above, you see Refrige
ator Parts receiving the
Fine Synthetic Enamel Fi
ish in Mahon Hydro-Fil
Spray Booths, which a
part of a Complete Mah
Finishing System.

Refrigerator Parts on a continuous conveyor line emerging from a Mahon Finish Baking Oven — part of the same Finishing System.

... W

Here you
System pl
by Mahon
facturers
finish on h
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is an influe
is the time
your produ

T H E

Engineers
Machines,
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Finishing SYSTEMS

for ENAMEL • LACQUER • PAINT • VARNISH

. . . Where Fine Finish is Imperative, it's Mahon Equipment

Here you see elements of a Complete Finishing System planned, engineered, built and installed by Mahon for one of the world's largest manufacturers of refrigerators. At point-of-sale, the finish on household appliances is of vital importance . . . as in the automobile industry, eye-appeal is an influencing factor in refrigerator sales. Now is the time to safeguard the future saleability of your product with the finest finish obtainable. You can rely on the Mahon organization to plan and engineer a Finishing System to do just that . . . because, Mahon's twenty-eight years of experience in this highly specialized field, enhanced by constant research and development, have endowed Mahon engineers with a wealth of technical knowledge and practical know-how not available to you elsewhere. See Mahon Insert in Sweet's Mechanical Industries File for complete information.

THE R. C. MAHON COMPANY

HOME OFFICE and PLANT, Detroit 11, Mich. . WESTERN SALES DIVISION, Chicago 4, Ill.

Engineers and Manufacturers of Complete Finishing Systems including: Metal Cleaning Machines, Rust Proofing Machines, Dry-off Ovens, Hydro-Filter Spray Booths, Filtered Air Supply Units, and Drying and Baking Ovens. Also Paint Sludge Reclaiming Units, Hydro-Foam Dust Collectors, and many other Units of Special Production Equipment.

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Speed Production
Cut Costs
Improve Quality with

EVENRAY SYSTEM
fostoria
FOR BAKING • DRYING •
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Write us about your problem or check the subject which interests you and mail the coupon.

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(1) Prime and finish coats of paint. (2) Insulation on electrical windings.

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★ **DEHYDRATING**

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(1) Metal Products.

★ **PREHEATING**

(1) Metal products to secure shrink fit. (2) Fibre, metal to make shearing and punching easier. (3) Glass closures prior to filling to prevent breakage. (4) Syrups, grease, oil, paint in containers to speed flow. (5) Plastics prior to forming. (6) Metal prior to welding.

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(1) Soldering. (2) Cooking food. (3) Carbonizing woolen materials. (4) Comfort heating. (5) Sanforizing.

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Without obligation, please send us information about the items we have checked.

Company_____

Address_____

City_____ State_____

Attn._____ Title_____

High-
INDUSTRIAL
for every
EASIER TO APPLY...
PITTSBURGH Industrial Enamels are high-quality synthetic finishes having excellent flexibility and adhesion to metal and wood surfaces. They may be sprayed, brushed or dipped. Air dry or bake them with conventional equipment. Available in a wide range of attractive colors, they meet almost every general finishing requirement.
PITTSBURGH PLATE GLASS COMPANY
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PITTSBURGH
PAINTS • GLASS • CHEMICALS • BRUSHES • PLASTICS
PITTSBURGH PLATE

Quality
FINISHES
purpose!
LOOK BETTER LONGER
Write For Free Booklet!
We have available a comprehensive booklet describing the properties of Pittsburgh Standard Industrial Enamels and how to use them most advantageously. Send today for a free copy.
Industrial
FINISHES
PPG
STANDARD
INDUSTRIAL
ENAMEL
Brush-Dip-Spray
Air-Dry or Bake
PITTSBURGH
Industrial FINISHES
GLASS COMPANY

SPEED-O-LAQ INTRODUCES

a Sensational NEW Quick-drying Finish for Wood and Metal . . .

CLOR-O-LAC

"A Chlorinated Rubber Coating"

SPRAY APPLICATION AIR DRIES IN 3 OR 4 MINUTES TO A *HIGH GLOSS*

HIGHLY RESISTANT TO: ALKALIS GASOLINE GREASE EXTREME WEATHER

IDEAL FOR SPRAY ROLLER COAT OR DIP APPLICATION

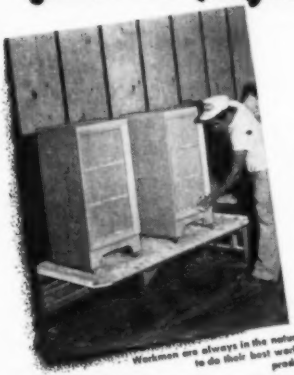
SPEED LAQ PRODUCTS

CLOR-O-LAC, an amazing, quick-drying "chlorinated rubber coating," offers merits heretofore unknown! CLOR-O-LAC'S hi-speed drying time of 3 or 4 minutes is a tremendous help in speeding production. Available in clear or any color, CLOR-O-LAC gives your wood and metal products a beautiful, glossy finish that is tougher and far longer-lasting than ordinary applications! More eye-appeal... more sales! For further details about CLOR-O-LAC, write:

THE SPEED-O-LAQ PRODUCTS CO., INC.
INDUSTRIAL DIVISION
2386 Wycliff, St. Paul 4, Minnesota

GEORGE KOCH SONS, INC.

You are paying for this



Workmen are always in the natural position to do their best work — at high production rates.

DE BURGH
CONVEYOR SYSTEM

-BUT YOU COULD HAVE IT WORKING FOR YOU AND INCREASING YOUR PROFITS!

Every furniture manufacturer who sees this KOCH-ENGINEERED system in operation instantly realizes the big price he's paying for out-of-date finishing methods. You yourself can quickly see its worth just by studying the two illustrations here shown.

No waste motions. No waiting time. The piece is always right where it should be for maximum productive man-hours.

With the DeBurgh Conveyor you can do inspection, white sanding, putty work, spraying, wiping, drying, sanding striping, decorating, shading, glazing, rubbing, attaching hardware, wrapping, touch up work and packing ***all on one conveyor.***

No danger of dirt falling from overhead conveyors. No lateral sway or pendulous movement. No lifting or pushing heavy pieces.

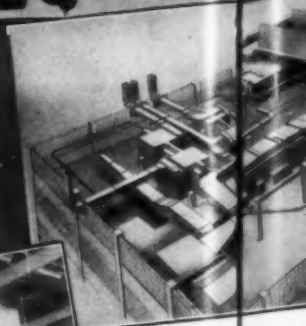
The DeBurgh Conveyor System is ***specially designed for the furniture industry.*** It gives from 100% to 300% increased production and usually effects labor savings in excess of 50%. Ask us to show you what it can do for ***your*** finishing department.

Send for Circular E-5

GEORGE KOCH SONS, INC., EVANSVILLE 4, INDIANA

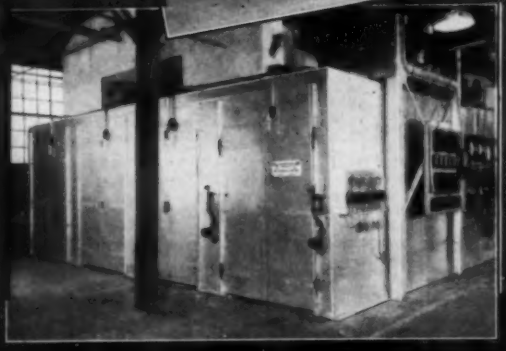
COMPLETE FINISHING SYSTEMS

Co-ordinated FINISHING EQUIPMEN



Artist's wash drawing, the way view of ing company's Complete ...tion—exter... by Peters-Dalton, Inc

see our CATALOG in SWEET'S FILE MECHANICAL INDUSTRIES



WASHERS SPRAY BOOTHS OVENS

PIENT for ALL PRODUCTION USES

...rawing, sh... way view of a large eastern manufactur-
Complete ...tem—entirely engineered and installed
..., Inc.

A car-load shipment, showing a consignment of a complete Metal Protective System

In planning a COMPLETE FINISHING SYSTEM—as a single, co-ordinated UNIT, three facts stand out—LOWER initial cost—valuable floor space saved through COMPACT DESIGN—lowered Production Costs through integration of the finishing stages—accomplished *only* by engineering Washers, Spray Booths, Ovens and other necessary equipment to the exact requirements of your product and production.

The accompanying illustrations show typical examples of Peters-Dalton engineered installations. When considering new Finishing Equipment, remember that in a Peters-Dalton system you get *better planning* and *better engineering*. . . . the result, BETTER FINISH at LOWER COST.

...CPLETE
...ISHING
...STEMS

...TERS DALTON Inc.

...17... VAN BORN ROAD • DETROIT 28, MICHIGAN

SAVE TIME MONEY PAINT AIR with the NEW M

HERE'S HOW... The New Brake Shoe Micro-Spray gun gives you more efficient, faster paint distribution by spraying with less cubic feet of air per minute at lower pressures. Though you actually use less paint, a smoother, better finish results through finer atomization, and more even distribution. The secret is . . . uniform flow of air and paint.

Detrimental effects from air pressure drop and eddy currents have been eliminated by designing ample air passages in the Micro-Spray gun body. Air distributors in air cap wing jets make it possible for you to maintain a perfect pattern even at the highest spray pressures. Thus the painters' bugaboo, fishtail or split in spray pattern, has been eliminated.

Another special feature is the highly accurate control of spray width provided by the angle of the needle. One revolution of the adjusting knob changes the air flow only to a minute degree.

Use the Micro-Spray gun for only *one* day and you, too, will become an enthusiastic booster.

MORE COMPRESSED AIR POWER FOR LESS MONEY

When selecting an air compressor pick the one that delivers more compressed air power per horsepower. Then you'll buy a Kellogg-American with its many new, exclusive features.

WRITE *for complete information to American Brake Shoe Co., Kellogg Division, Rochester 9, New York.*

A PRODUCT OF

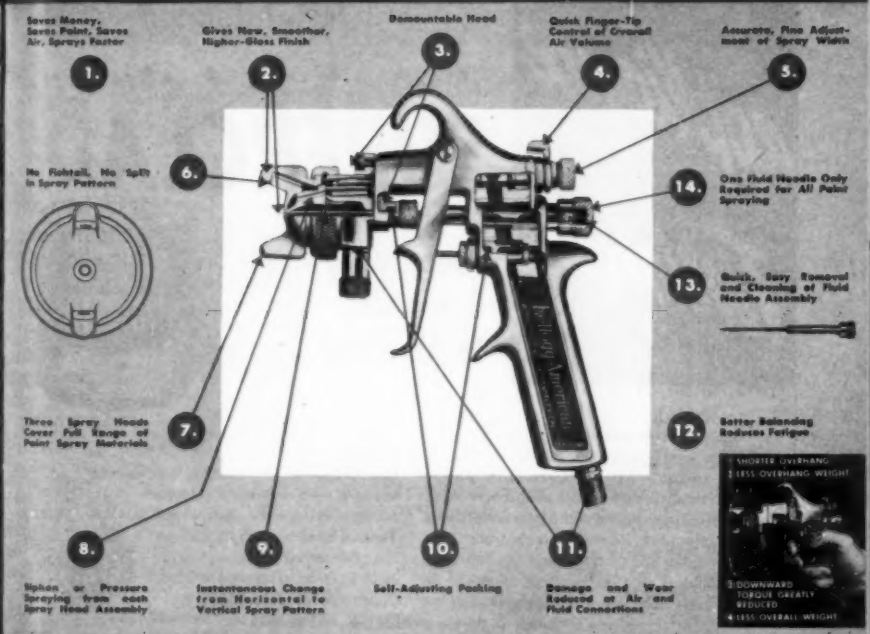
AMERICAN Brake Shoe COMPANY

© 1948

KELLOGG DIVISION

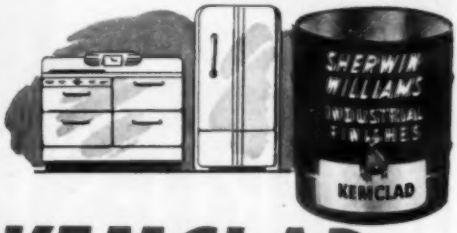
Brake Shoe

W MICRO-SPRAY GUN


1. Saves Money, Saves Paint, Saves Air, Sprays Faster
2. Gives New, Smoother, Higher-Gloss Finish
3. Demountable Head
4. Quick Finger-Tip Control of Overall Air Volume
5. Accurate, Fine Adjustment of Spray Width
6. No Fishtail, No Split in Spray Pattern
14. One Fluid Needle Only Required for All Paint Spraying
13. Quick, Easy Removal and Cleaning of Fluid Needle Assembly
7. Three Spray Heads Cover Full Range of Paint Spray Materials
12. Better Balancing Reduces Fatigue
1 SHORTER OVERHANG
2 LESS OVERHANG WEIGHT
3 DOWNWARD TORQUE GREATLY REDUCED
4 LESS OVERALL WEIGHT
8. Siphon or Pressure Spraying from each Spray Head Assembly
9. Instantaneous Change from Horizontal to Vertical Spray Pattern
10. Self-Adjusting Packing
11. Damage and Wear Reduced at Air and Fluid Connections

Brake Shoe MICRO-SPRAY Gun Alone Brings You These 14 Advantages

2 great appliance Finishes



KEMCLAD

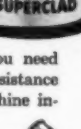
Hard, tough adhesive! Resistant to staining! Non-Yellowing!

★ ★ ★ ★ ★ ★ ★

SUPERCLAD

Amazingly Resistant to Alkalies!

Here are two outstanding finishes to give your appliances the selling feature of gleaming, *lasting* whiteness under extremely severe service conditions. With its ability to withstand overbake without discoloration, its resistance to fruit acids, beverages and food spotting, its hardness, toughness and high gloss, KEMCLAD is unbeatable for such appliances as freezers and refrigerators. If you need a finish with extremely high resistance to alkalies—as for washing machine interiors and exteriors, then SUPERCLAD is the finish for you! The Sherwin-Williams Co., Industrial Division, Cleveland 1, Ohio. (Export Division, Newark, New Jersey.)



Products of Sherwin-Williams Industrial Research

SHERWIN-WILLIAMS INDUSTRIAL FINISHES

KEM LUSTRAL 42

No need to carry a large inventory of finishes—when *one* enamel will do so many jobs so well!

Put Kem Lustral 42 on practically any kind of surface. Use it for product finishing—or for exterior or interior plant maintenance. Apply it by brushing, dipping or spraying. Bake it if you prefer, or simply air dry it. In every case, Kem Lustral 42 levels perfectly, hides beautifully, dries to a tile-like finish.

Pick just the color you want from a line of 21—plus black, gloss white and semi-gloss white. And get the Kem Lustral 42 you want quickly and conveniently—from any one of the 385 Sherwin-Williams branches located in principal cities from coast to coast. The Sherwin-Williams Co., Industrial Division, Cleveland 1, Ohio. (Export Division, Newark, New Jersey.)

Another Product of Sherwin-Williams Industrial Research

Can be Brushed! Dipped! Sprayed!

For Industrial Interior or Exterior Use!

Can be Air-dried or Baked!

21 colors plus Black, Gloss White and Semi-Gloss White!

AVAILABLE AT 385 SHERWIN-WILLIAMS BRANCHES!

SHERWIN-WILLIAMS INDUSTRIAL FINISHES

GRAND RAPIDS CHAIR COMPANY
MANUFACTURERS OF FINE FURNITURE

GRAND RAPIDS 2, MICHIGAN

OFFICE OF THE VICE PRESIDENT

September 27, 1948

DeBurgh Conveyors

Redondo Beach, Calif.

Dear Mr. DeBurgh:

Because of the quality finish required for SLIGH FURNITURE, I made a thorough investigation of conveyorized finishing in many Southern, Eastern, and Pacific Coast Factories, to determine if any system would eliminate the excessive handling, and still maintain our quality.

After observing your system in operation in several Factories I decided that the DeBURGH FINISHING SYSTEM was the only one that would meet our exacting requirements.

Our DeBURGH SYSTEM has been operating for six months, and a few reasons why we are so completely satisfied are listed as follows.

Work is properly placed for each operation, and positioned to secure the best light.

All damage formerly caused by handling has been eliminated.

Controlled temperature and humidity prevents "filler greying, blushing, orange peel", etc.

It will carry a wide variety of furniture namely large buffets, and china cabinets along with small tables, and chairs.

It is flexible in that the type of finish can be changed as desired.

All labor formerly engaged in lifting and shoving, to transport stock thru the department, has been eliminated so that employees now concentrate on productive work only.

In my opinion, the DeBURGH CONVEYOR is the greatest improvement in finishing since the introduction of spray guns.

Very truly yours,

GRAND RAPIDS CHAIR COMPANY

B. M. Baker

B. M. Baker

SLIGH MANAGEMENT

BMBrnt

Investigate! **DeBurgh Conveyors**
For Assembly, Finishing and Upholstering
Box 202 — Redondo Beach, Calif.

Negative Results

. . . make for a trick treatment of the photographer's art. Yet the positive would be more appealing, you'll agree.

Here in our Creative Studio we give the cold shoulder to trick ideas on product finishing. Instead, our skilled staff concentrates on getting positive results as exemplified by finishes that are down-to-earth . . . sales appealing!

And investigation of our services can prove mutually beneficial. Send a sample of your merchandise and we will give it a new, provocative finish at no cost or obligation.

No Tampering with Quality

ROCKFORD VARNISH *Company*
ROCKFORD, ILLINOIS

Manufacturers of Protective and Decorative Coatings

F-L-A-S-H NEWS Journal

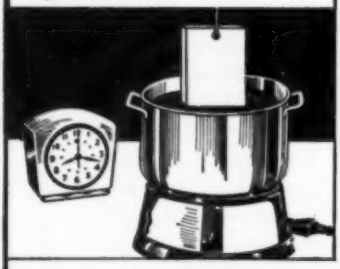
ATTENTION WOOD PRODUCTS MANUFACTURERS

New Synthetic Formulation

CUTS HOURS OFF YOUR FINISHING SCHEDULE

STANDS BOILING WATER FOR FULL HOUR!

Stands immersion in water for 96 hours without failure. Can your present finish match this performance???



Dries to Touch in 7 Minutes

High Solid Content Goes Twice as Far!!

Lower Unit Cost

Thins with VM & P Naphtha

For Spray or Dip. Special formula for Roller Coat Application Available.

FLASH UNDERCOATER #7 WHITE

Ideal for Kitchen Cabinets, Venetian Blinds, Lawn Furniture, many other wood products

A brand new formulation yet already tested and proven years ahead of old types. Better filling. Permits application of primer and finish coat in less than 1 hour.

STRATHMORE PRODUCTS

A single trial will convince you as it has hundreds of leading wood products manufacturers. Flash Undercoater #7 White guarantees lower unit cost with superior performance. Write at once!

Strathmore Products, Inc.

1970 W. FAYETTE ST. SYRACUSE, N. Y.

Specialists in Fine Industrial Finishes

NEW JERSEY FACTORY: UNIFILM PAINT CO., SOMERVILLE, N. J.

You Can Save THOUSANDS OF DOLLARS

WHICH NOW ARE THROWN AWAY IN YOUR SPRAY BOOTH

SAVES THINNER $

SAVES PAINT $

SAVES LABOR $

SAVES REJECTS $

SAVES TIME $

SAVES MONEY $

by Installing the Revolutionary, New
Bede Paint Heater

One large company is saving $50,000 a year through the use of Bede Paint and Air Heaters. In many other plants, savings of 25% or more are reported—with improved finish and fewer rejects.

With a Bede Paint and Air Heater, one coat often is as satisfactory as two—because heated paint has reduced viscosity, requires less thinner, and gives smoother, more even distribution of paint particles. Overspray is reduced, drying is faster, and higher gloss is obtained.

The Bede unit is safe, simple to set up, easy to operate. Installed between the pressure tank and spray gun, it takes up little space and operates under simple thermostatic control. Another unit, which heats paint only, is available if desired.

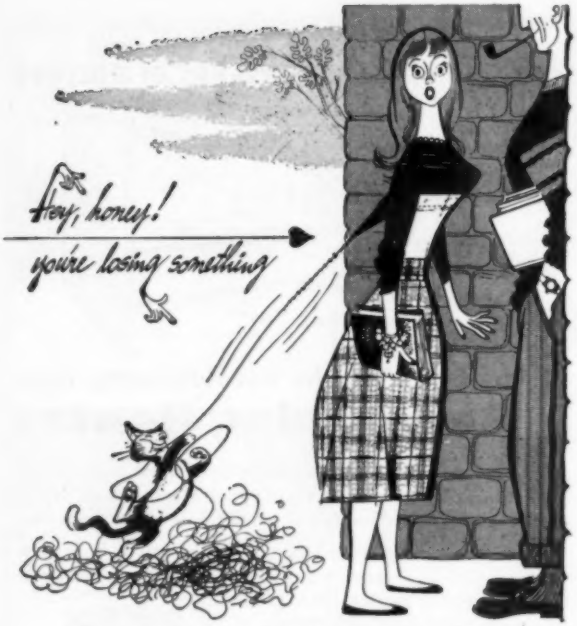
Write for illustrated booklet and full details.

BD

BEDE PRODUCTS Inc.

INDUSTRIAL FINISHING SPECIALTIES

3309 WEST 118th STREET • CLEVELAND 11, OHIO

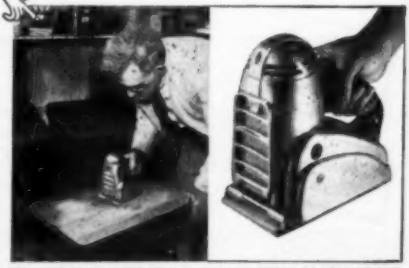


...and you're losing something, too!

...up to $125.00 PER MONTH per man if you sand by hand

Replace hand operations with a Sterling Portable Electric Sander! It does the job 3 times faster and produces a smoother, more uniform surface. Use it on wood, metal or plastics . . . bare surfaces, undercoats and for sanding out runs and touch-up work on paint, enamel, lacquer or varnish.

There's no vibration with the Sterling—it's compact, lightweight, and easy to operate on flat or curved surfaces—even hard-to-reach places. Ask your distributor for a demonstration!



REFINISHING SMALL TABLES IS ONE OF HUNDREDS OF APPLICATIONS.

STERLING 1000 SANDER
PORTABLE ELECTRIC

Write for illustrated folder!
STERLING TOOL PRODUCTS CO.
1234-M Milwaukee Avenue, Chicago 22, Illinois

Production Proven

Research has always been regarded as the most important single function of the YARNALL organization.

The finest of modern laboratory equipment and a staff of highly trained specialists make it possible to constantly improve established YARNALL products and to develop many new scientifically correct finishes for special and exacting requirements.

Maybe you have a finishing problem—if so, tell us about it... chances are we can help.

● INDUSTRIAL **YARNALL** FINISHES ●

● INDUSTRIAL **YARNALL** FINISHES ●

● INDUSTRIAL **YARNALL** FINISHES ●

YARNALL PAINT COMPANY

Industrial Division

PHILADELPHIA
PENNSYLVANIA

1885-1948

The *Flo-Master* TOUCH-UP BRUSH
for the furniture trade

Furniture Finishers are enthusiastic about the results they get with the FLO-MASTER TOUCH-UP brush. It does a perfect job of touching up edges before lacquering and varnishing. It is also perfect for glue spots and glue joints. It is fool proof and easy to use.

The FLO-MASTER Touch-Up Brush shown at the left contains a large cylinder reservoir, to hold FLO-MASTER INK STAIN, and a patented valve which controls and maintains a constant and uniform flow of ink stain.

Flo-Master INK STAIN

A specially formulated stain for touch-up work. It is alcohol and water proof. Can be applied by cheese cloth on drawer fronts and other light spots with equally good results to uniform the work. After standing for a few minutes can be rubbed to desired shade. This can be done perfectly after piece has been rubbed. No finishing room should be without the FLO-MASTER TOUCH-UP BRUSH, and the FLO-MASTER INK STAIN which is available in mahogany, walnut and maple.

Brush and Kit—price, $4.95

HUDSON SUPPLY COMPANY

BOX 21 **HUDSON, NORTH CAROLINA**

For a handsome, durable, protective FINISH Carrier chooses

Egyptian

Small wonder that CARRIER, one of the leaders in air conditioning equipment, should have turned to Egyptian for a smart-looking, durable finish for their famed WEATHER-MAKER unit for store and office air conditioning.

Egyptian finishes are noted for their soft, beautiful sheen, for their resistance to wear, for their protective qualities.

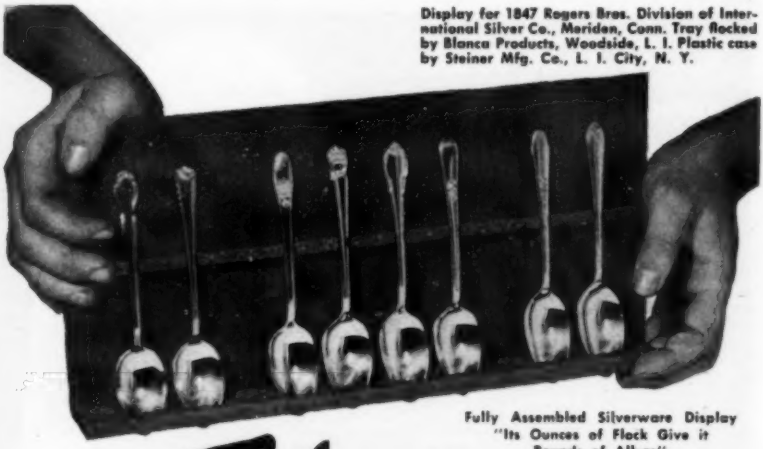
If you make any metal product that requires a quality finish, call on Egyptian first for a specification that assures complete satisfaction.

This CARRIER WEATHERMAKER combines the creative genius of HENRY DREYFUSS, noted industrial designer, with CARRIER engineering and manufacturing skill. The CARRIER name stands for dependability in performance. The WEATHERMAKER is finished with EGYPTIAN RUST INHIBITING SAND GRAY PRIMER, and EGYPTIAN HIGH-BAKE SYNTHETIC ENAMEL.

THE EGYPTIAN LACQUER MANUFACTURING COMPANY

SPECIALIZED PRODUCTION FINISHES

P. O. BOX 444, NEWARK, N. J.



Display for 1847 Rogers Bros. Division of International Silver Co., Meriden, Conn. Tray flocked by Blanca Products, Woodside, L. I. Plastic case by Steiner Mfg. Co., L. I. City, N. Y.

Fully Assembled Silverware Display "Its Ounces of Flock Give it Pounds of Allure"

Surfaced with Sprayed-on *Flock*

Plain Wood Panels Acquire the Velvet Touch that Subtly Assists Quality-ware Selling

Here, for example, a strip of plywood 7" x 15" is inexpensively surmounted on the front with two paralleling wood strips, notched at intervals for silverware samples and fitted on the back with literature pockets. Prepared at least cost, it is then transformed by Flock surfacing (for little extra) into a display stage that has the appearance of having been completely covered with a richly colored velvet!

When assembled with plastic components, the unit serves to impressively display and identify a selected group of eight silverware patterns. With Claremont Flock, much is possible—for little. An ounce of Flock is worth a pound of allure. It excels in the art of make-believe . . . fires the imagination—and justifies its application. Get the story about Flock—today . . . also names of processors ready to serve you.

CLAREMONT WASTE MFG. CO.
CLAREMONT, NEW HAMPSHIRE

Greater Economy with Lacquer!

Lacquer's unequalled drying speed, without special drying or baking equipment . . . its lower coat-for-coat cost . . . make for economies impossible with any other finish. *You can do it better with lacquer!*

HERCULES POWDER COMPANY
INCORPORATED
CLB-1

928 Market Street, Wilmington 99, Delaware

Hercules does not make lacquers, only materials from which they are made. Consult your lacquer supplier.

For the Finest Finishes

...DEPEND ON THE

DEVILBISS MBC

"finest spray gun of them all"

● Spray operators and top management alike are enthusiastic in their praise of the DeVilbiss MBC. They have learned through actual experience that the MBC produces finer finishes —year in and year out—on all spray painting and coating operations. That's why it is so widely used for so many purposes in so many industries everywhere.

Consistent outstanding performance and long life is the logical result of advanced design and construction in every single detail. The DeVilbiss MBC is sturdily built to withstand the abuse of constant day after day service—yet, it is lightweight and versatile. It handles easily—sprays all types of materials—on all kinds of surfaces. The removable spray head, another outstanding DeVilbiss feature, saves time and simplifies changing from one material to another.

Depend on the DeVilbiss MBC—*finest spray gun of them all* to always obtain the finest quality finishes. And depend on your DeVilbiss engineer for expert help on all your coating and finishing problems.

THE DEVILBISS COMPANY • Toledo 1, Ohio

Canadian Plant: WINDSOR, ONTARIO

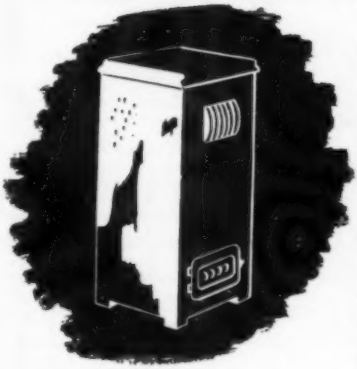
DE VILBISS

A New *Vedoc** Finish

"COMBUSTION CHAMBER"

BLACK

Stays Black at 1000° F



FOR SPACE HEATERS, a new "Vedoc" finish—"Combustion Chamber" Black—stays black in service. Its pigment remains and stays black at temperatures as high as 1000° Fahrenheit. It protects the chamber from rusting, and continues its protection after the vehicle has completely converted—yet gives off a minimum of fumes when the heater is put into service.

VEDOC "Combustion Chamber" Black air dries in 10 to 15 minutes, and can be baked at high or low temperatures. The low cost of this attractive new finish makes it very desirable to use on all modern base burners.

Vedoc

*T. M. Reg. U. S. Pat. Off.

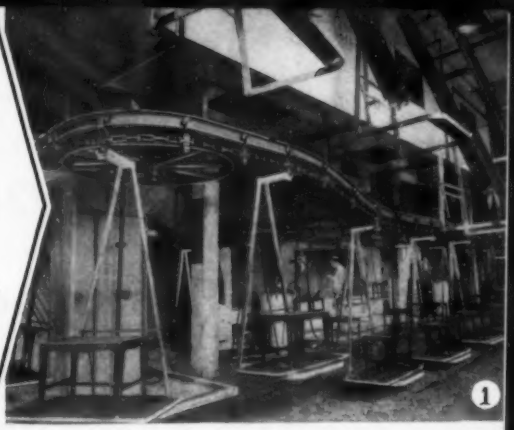
All "Vedoc" finishes are developed for a specific use, then slightly varied to best fit into each customer's set-up. For more information about these "better finishes" write . . .

FERRO ENAMEL CORPORATION
LIQUID PLASTICS DIVISION
CLEVELAND 5, OHIO

Have high production costs go

DEPEND ON DU PONT FOR B

P-B POINTS THE WAY



to increased production . . . lower costs better quality products

Palmer-Bee is well qualified to point the way to higher production, lower costs and improved quality because P-B Engineers have been specializing in solving the production problems of industry for over 40 years.

P-B Conveyors are not only a means of transporting products, but also processing production through various operations, such as painting, drying, sandblasting, washing, Bonderizing, etc. They are also used for the sub-assembly of units and final assembly of complete products. If outmoded materials handling methods are hampering production and increasing your costs, we suggest you call in a P-B Engineer.

PALMER **BEE** COMPANY

DETROIT 12, MICHIGAN

1. Furniture finishing room conveyors.
2. Wheel washer and Bonderizing conveyor.
3. Gas range assembly conveyor.

Repeated by

MR. STIX

This Special Offer

Deluxe "Electro-Knife"	$15.95
1 doz. assorted LACSTIX	5.40
1 jar Abrazo ex. ex. Concentrate 1 special Abrazo Felt	.75
Value	$22.10
Special Offer Price	18.10
You Save	$ 4.00
A Saving on a Saving 2 "Special Offers"	$34.50

Deluxe "ELECTRO-KNIFE"

Faster
Easier
Safer

Patent No. 2,427,209

Does a Better Burning-In Job

FINISHINE LABORATORIES, Inc.

The

VARNISH PRODUCTS COMPANY

Makers of . . .

CEL-U-LAK

LACQUERS and ENAMELS

FORM-A-ROC

ALKYD-AMINE ENAMELS

Also . . .

Bronzing vehicles, adhesives and other specialties for the industrial finishing of wood, metal, ceramics and plastics.

5204 HARVARD AVENUE, CLEVELAND, OHIO

A Young and Bertke OVEN

IS THE ANSWER TO YOUR OVEN PROBLEMS

From a small laboratory testing oven to a large production conveyor-type oven, you are sure of efficient operation at low operating cost when you install a Young & Bertke Oven. Write us; we can design and build the oven which will exactly fulfill your individual requirements.

The YOUNG BERTKE Co.

OVENS - SPRAY BOOTHS - FUME REMOVAL SYSTEMS

1126 HULBERT AVE CINCINNATI 14 OHIO

SUNBRITE

Complete Finishing Systems

BRONZE PASTE • BRONZE POWDERS

ALUMINUM PAINTS • GOLD POWDERS

CHROME-TYPE ALUMINUM PAINT

SUNBRITE MFG. COMPANY

(Formerly the Mitchell-Mayer Co.)

3506 Market St. St. Louis 3, Mo.

GEHNRICH

FINISH BAKING OVENS

QUALITY • SPEED • ECONOMY

CABINET • TRUCK OR
CONVEYOR TYPES

GAS • OIL • STEAM • ELECTRIC
FINISHING SYSTEMS

CLEANING EQUIPMENT

SPRAY BOOTHS • DIP TANKS

VENTILATING SYSTEMS

TRUCKS • RACKS • TRAYS

Write for Catalog 117

W. S. ROCKWELL CO.

246 Eliot Street • Fairfield, Conn.

POSITION WANTED

As paint or laboratory supervisor by graduate chemist with experience in metal cleaning, bonderizing, painting, testing of paints and other materials. Would consider smaller firms where producion and laboratory work could be combined. Address IF-576, care Industrial Finishing.

FINISHING FOREMAN WANTED.

High-grade wood furniture factory established fifty years in mid-west town of 35,000. Experienced in matching special colors. Starting pay $350.00 per month. Give references to whom we can write. We will pay travel expense preliminary interview. Address IF-568, care Industrial Finishing.

SALESMEN WANTED.

Experienced salesmen wanted in selling Industrial Lacquer for New England territory. One territory comprising Rhode Island and Connecticut; the other Maine, New Hampshire and Vermont. State qualifications. Industries called upon. Our men know of this ad. Address IF-571, care Industrial Finishing.

LACQUER SALESMEN WANTED.

A Newark manufacturer of an exceptionally fine line of lacquers and synthetics, including some exclusive features which offer great sales possibilities, seeks experienced salesmen, with established following in the industrial field. Territories open include metropolitan New York and New England states. Attractive drawing against commissions. All replies confidential. ABLON FINISHES, INC., 84 Waydell St., Newark 5, N. J., Phone, Market 3-5478.

WANTED.

Lustreless Olive Drab Lacquer, specifications 3-162-C, grade I. We are interested in purchasing large quantities of this material. Give quantity, price quotations, and shipping data. Address IF-581, care Industrial Finishing.

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Non-clogging, for silk screening clear, transparent gloss on photographs. Quick drying. NEW PROCESS STUDIOS, Flatiron Bldg., New York 10, N. Y.

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THE VOL-U-METER COMPANY

Buffalo 16, New York

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Used waterfall spray booth, ten or twelve foot. Must be in good condition and complete. Address IF-578, care Industrial Finishing.

FOR SALE.

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FOR SALE

Surplus plastic type sealer varnish, 50 drums, 50c gallon; sets 10 minutes, hard dry 3 hours, very pale. Will sell all or part. Address IF-572, care Industrial Finishing.

NEW EXPLOSION-PROOF MOTORS.

From Stock, 1/8, 1/4, 1/3, 1/2, 1-H.P. up. Single and Three Phase, also open and enclosed. PACKARD UTILITIES, 111 Edgewood Ave., New Haven, Conn.

FOR SALE.

Gas operated conveyor oven with D. C. motors and blowers. 32-ft. long, 33-in. wide, 3-in. deep, used in conjunction with varnishing machine; also 300 gals. of high-grade lacquer 24 colors, 10 to 20 gals. of each. Very reasonable. MIDWEST COLOR CARD CO., 522 S. Clinton St., Chicago 7, Ill.

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Blakeslee Standard D-45 Degreaser, steam heat dual vapor control, water separator and cooler, in A-1 condition. STORKLINE FURNITURE CORPORATION, 1801 S. Kilbourn Ave., Chicago 23, Ill.

FOR SALE

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Purchasing Dept.
55 W. 13th St. New York, N. Y.

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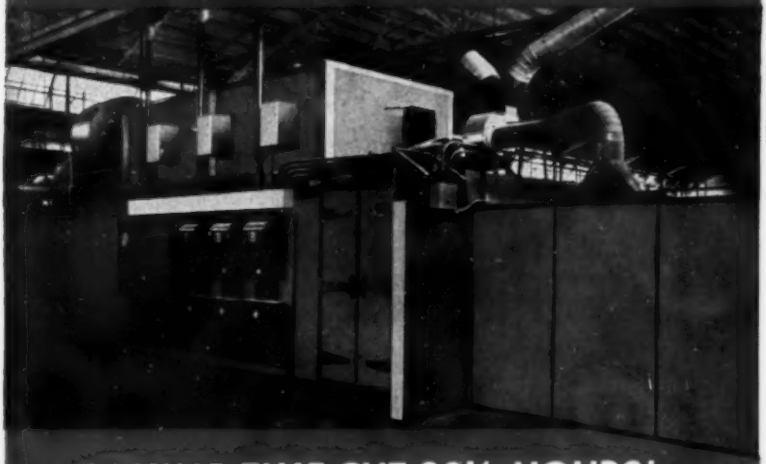

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